



# Flea Market Mapping

Michal Migurski  
Stamen Design

MILK MAP  
OF  
SAN FRANCISCO, CAL.,  
SHOWING

# Rescuing Maps

**Using open software and techniques to  
publish historical maps to the geographic web**

# Oakland

<http://teczno.com/old-oakland/>

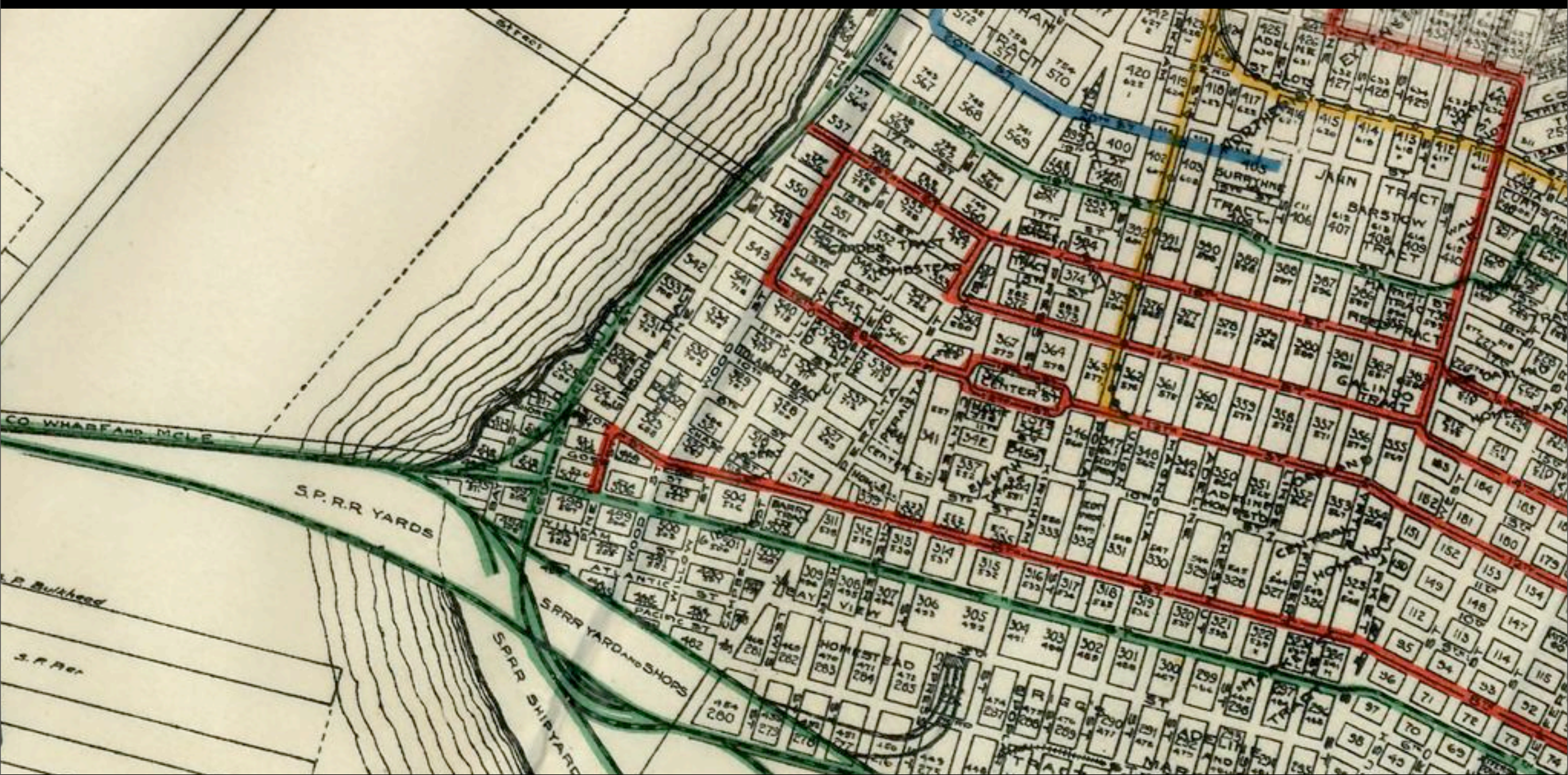




## 1877 Real Estate Map

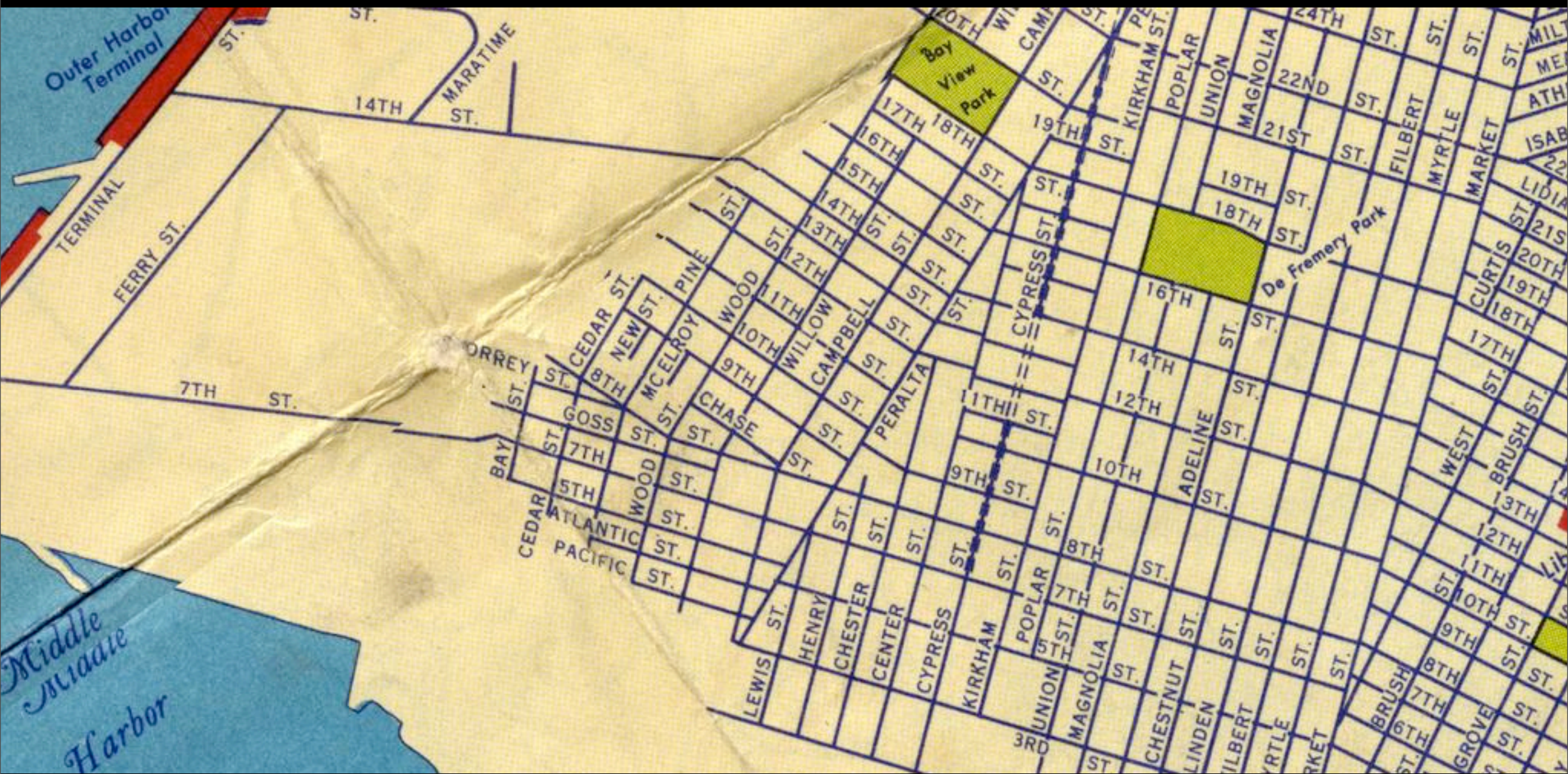
This is just a few years after the founding of Oakland, and you can see how unformed the city is: regularly-spaced, freshly-surveyed blocks, extending into the bay in some places where it seemed possible to simply fill in your own coastline.





1912 Realty Union Map  
Borax Smith's Realty Union was involved in both residential real estate and electric streetcars – the latter made the former possible, so it was important for this map to show the wealth of public transportation available to prospective commuters looking to move in.

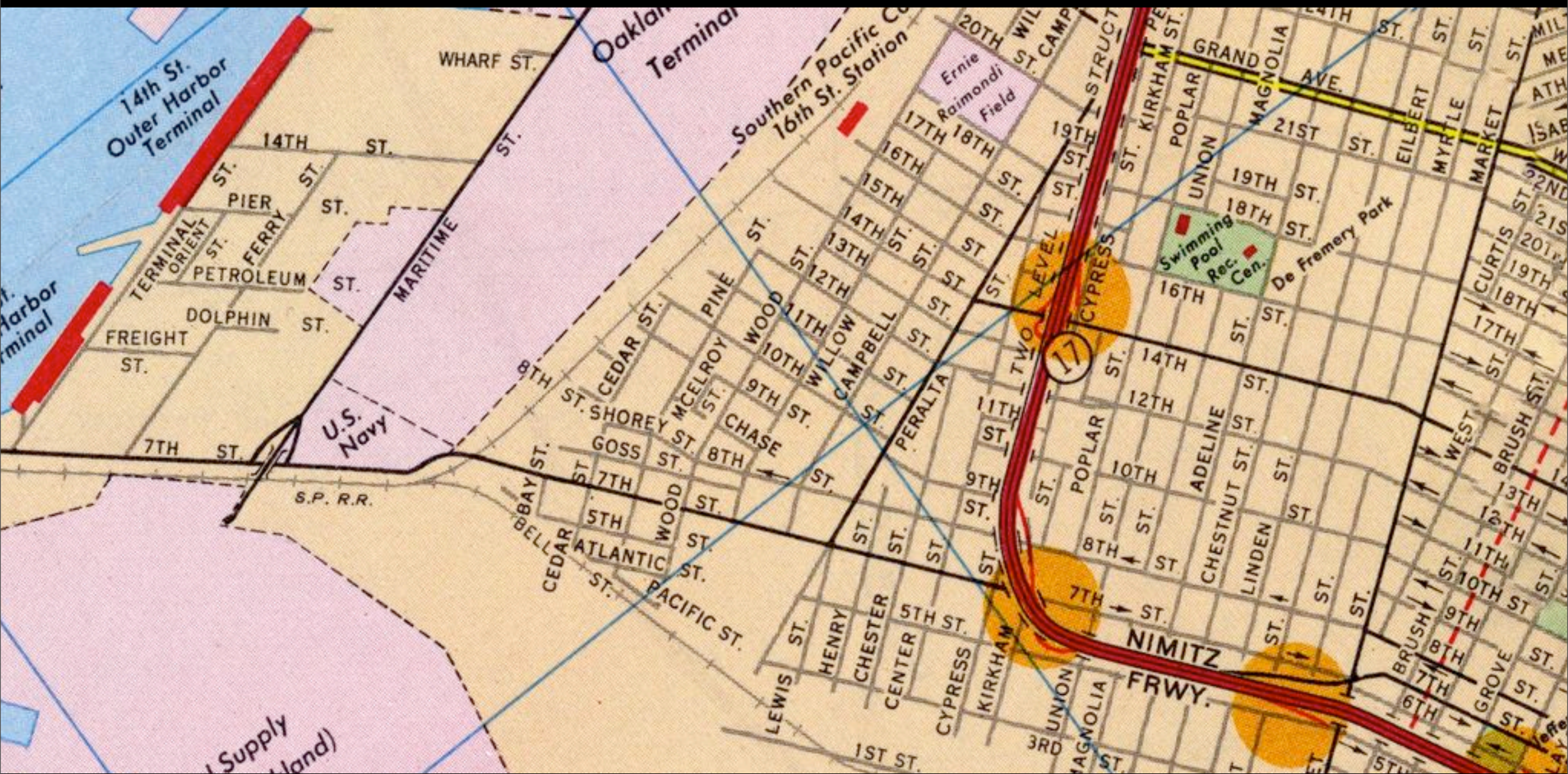




## 1936 Shell Oil Map

Two interesting things here: the coastline has been extended with no new corresponding residential streets, and rail service is completely omitted, even though the Key Route System was still thriving at this point.





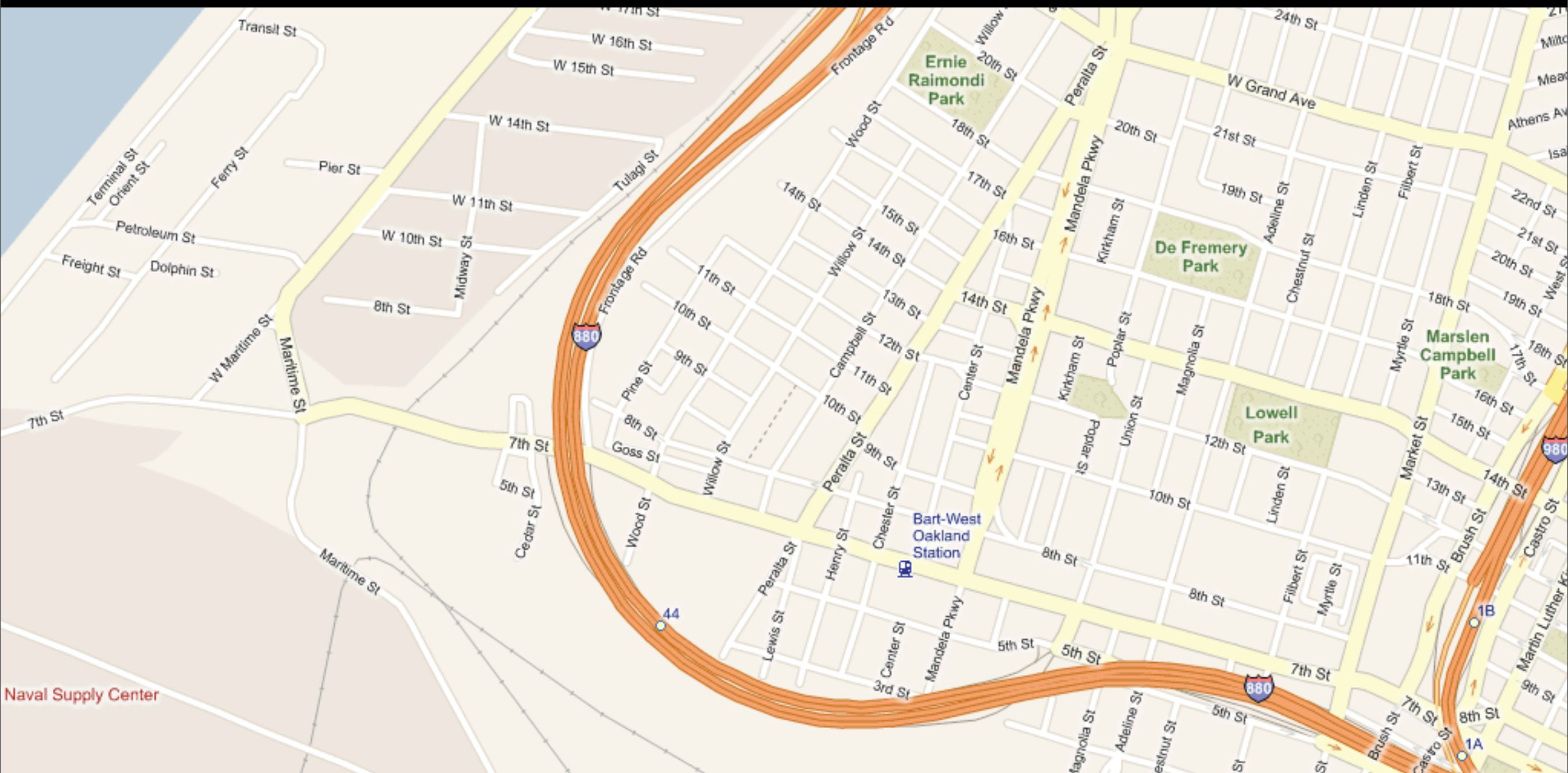
1967 Chevron Map  
The Cypress Structure is visible here as a cut through West Oakland; it was reviled by the local residents who felt that it cut their neighborhood in two.



1989







Present day Microsoft Virtual Earth  
Union Pacific rail right of ways were repurposed to create a new 880 freeway that circumvents downtown.





**Now**



# Tools, Process

Scanner, Photoshop,  
<http://getlatlon.com>, GDAL





1. I've been buying occasional road maps hoping to fill in a developing picture of the East Bay throughout the 20th century. This is a 1936 road map a lot like one that I have.



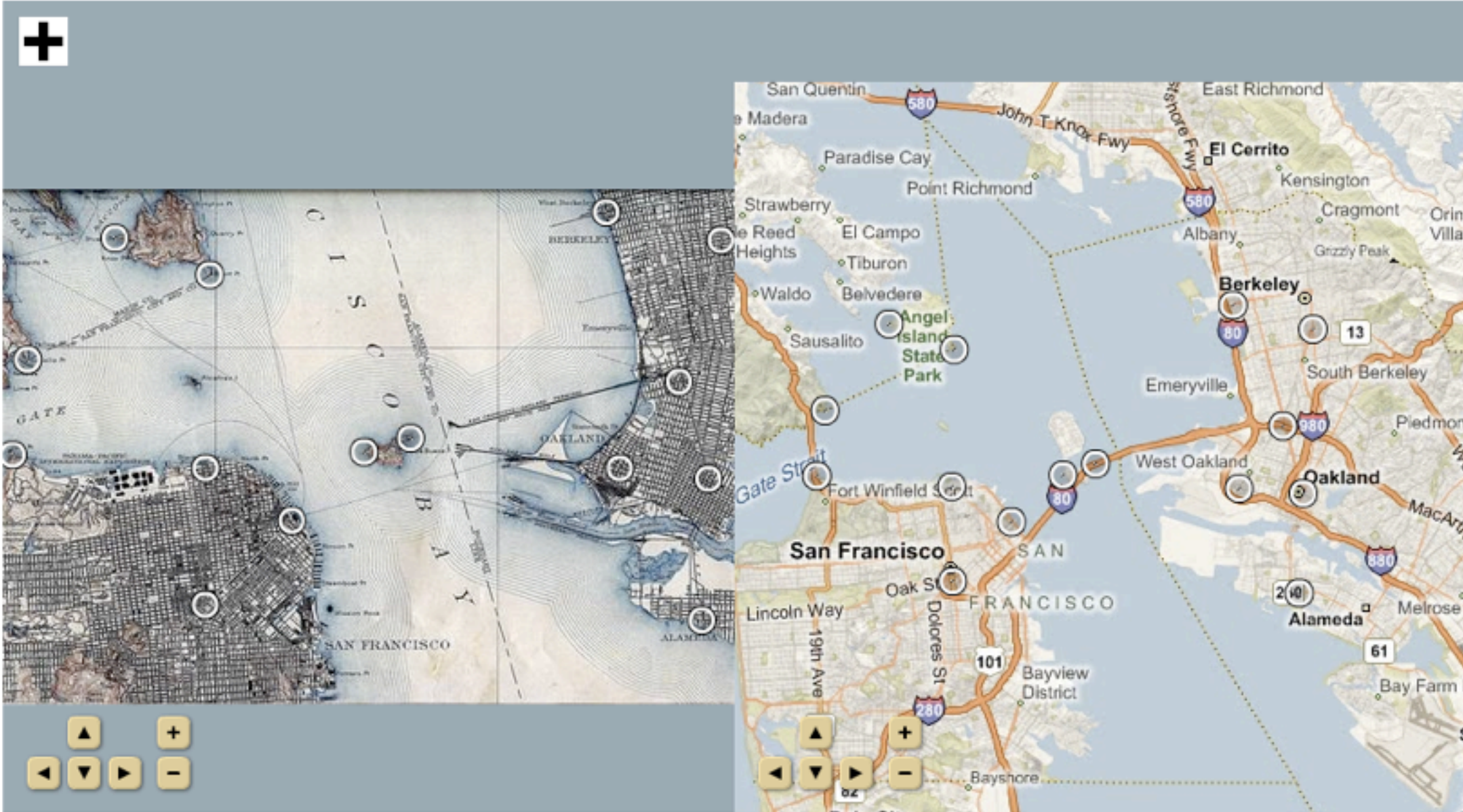
# “rubber sheet”

Alpha 1

http://locog.stamen.com/~migurski/rubbersheet/gcps.php?job=9D8DC9C8-C008-401B-A866-2133219F8670

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Alpha 1 http://s3.amazonaws.co... 2-r0-c0.jpg 256x256 p... Index of /academy/files...



- (795, 1021) ➔ (37.77518803, -122.41917389)
- (1008, 814) ➔ (37.79500211, -122.39430016)
- (797, 685) ➔ (37.80680257, -122.41962021)
- (321, 652) ➔ (37.81035590, -122.47652596)

2. GDAL lets you define ground control points: places on a given map that you know to be in a certain geographic location. This is a view of a web application I made to speed this process up, but it's possible to use Photoshop and Google Maps to laboriously complete this process.



# GDAL + EPSG:900913

<http://www.klokan.cz/projects/gdal2tiles/>

“Then a miracle occurs...”





# Georectified!

3. GDAL can “rubber sheet” the map to fit the real world’s geography: here I’ve scanned the two sides of the 1936 map and assembled them into their geographically correct positions, and you can see how they’re slightly warped.



# More Cities

**Other historical mapping projects**

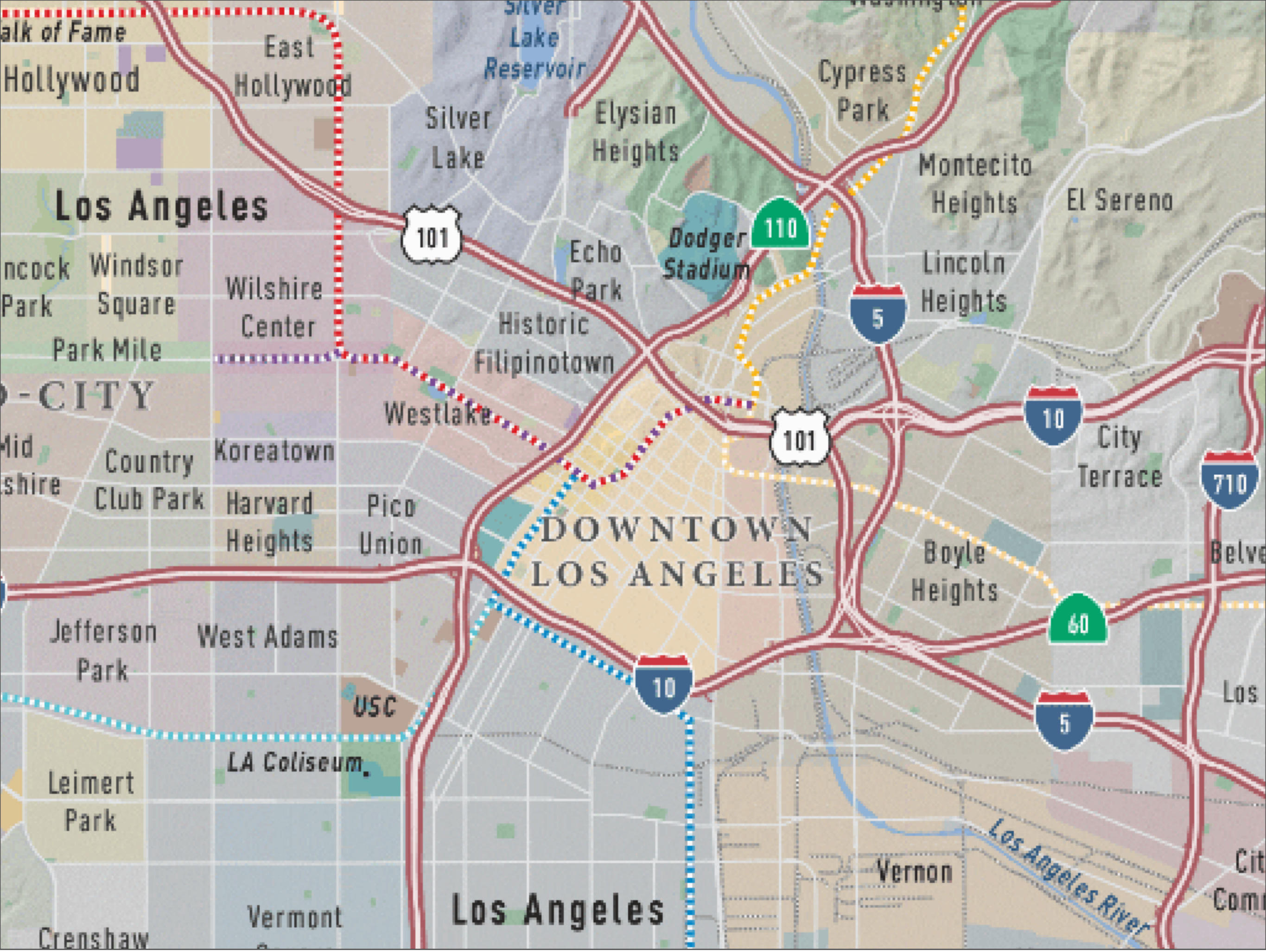


# Los Angeles

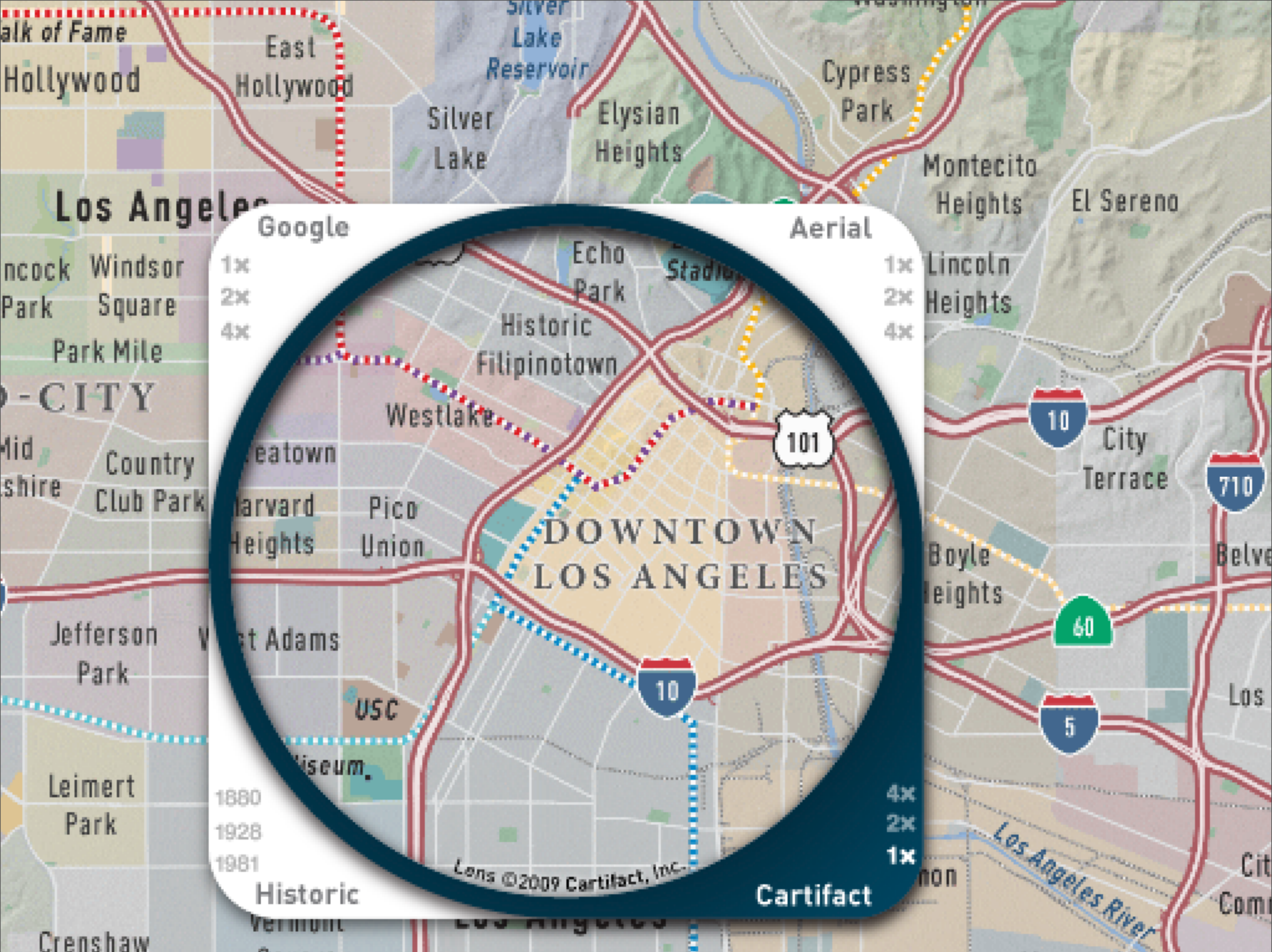
<http://maps.cartifact.com>

Cartifact, Los Angeles

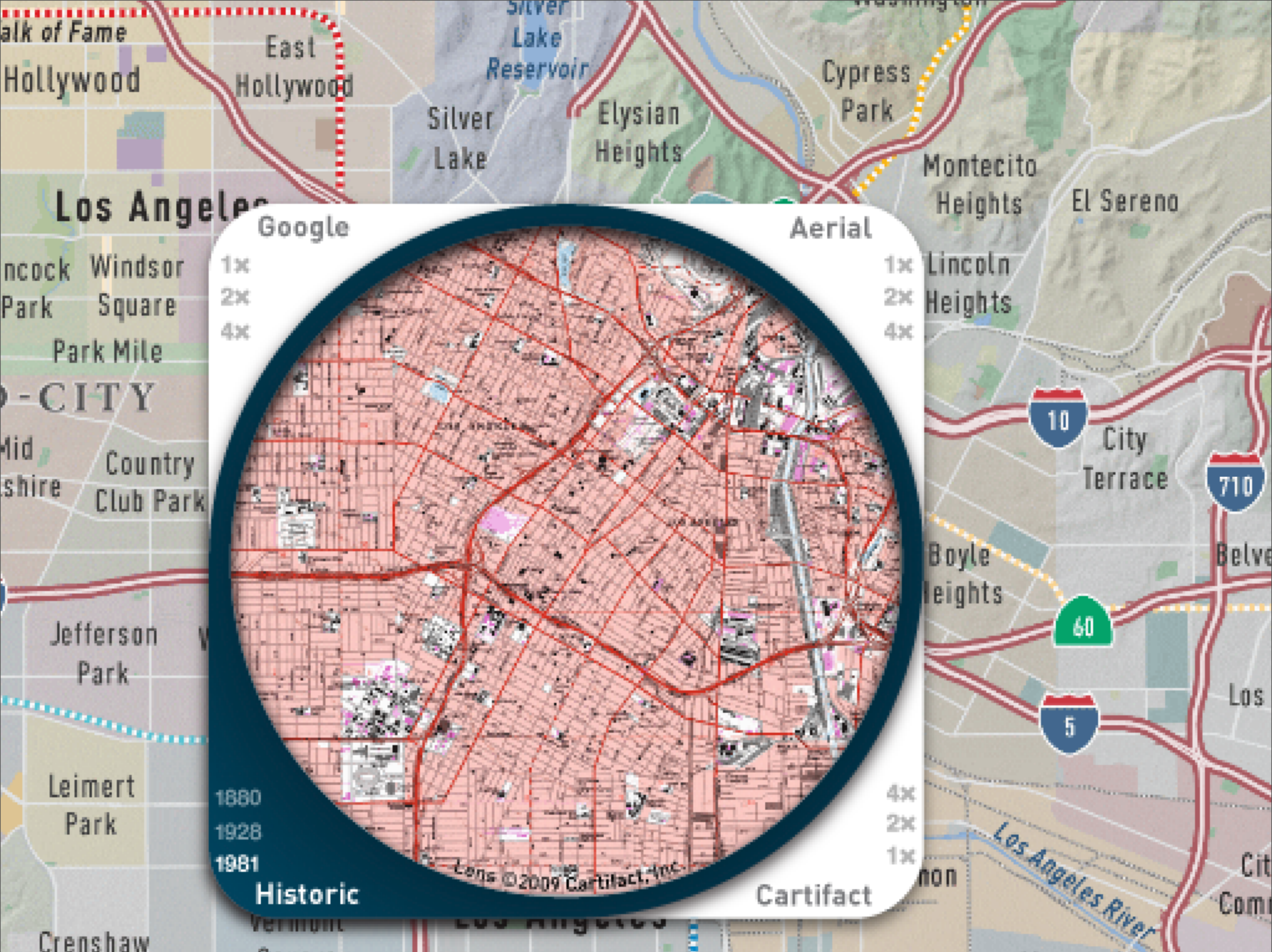






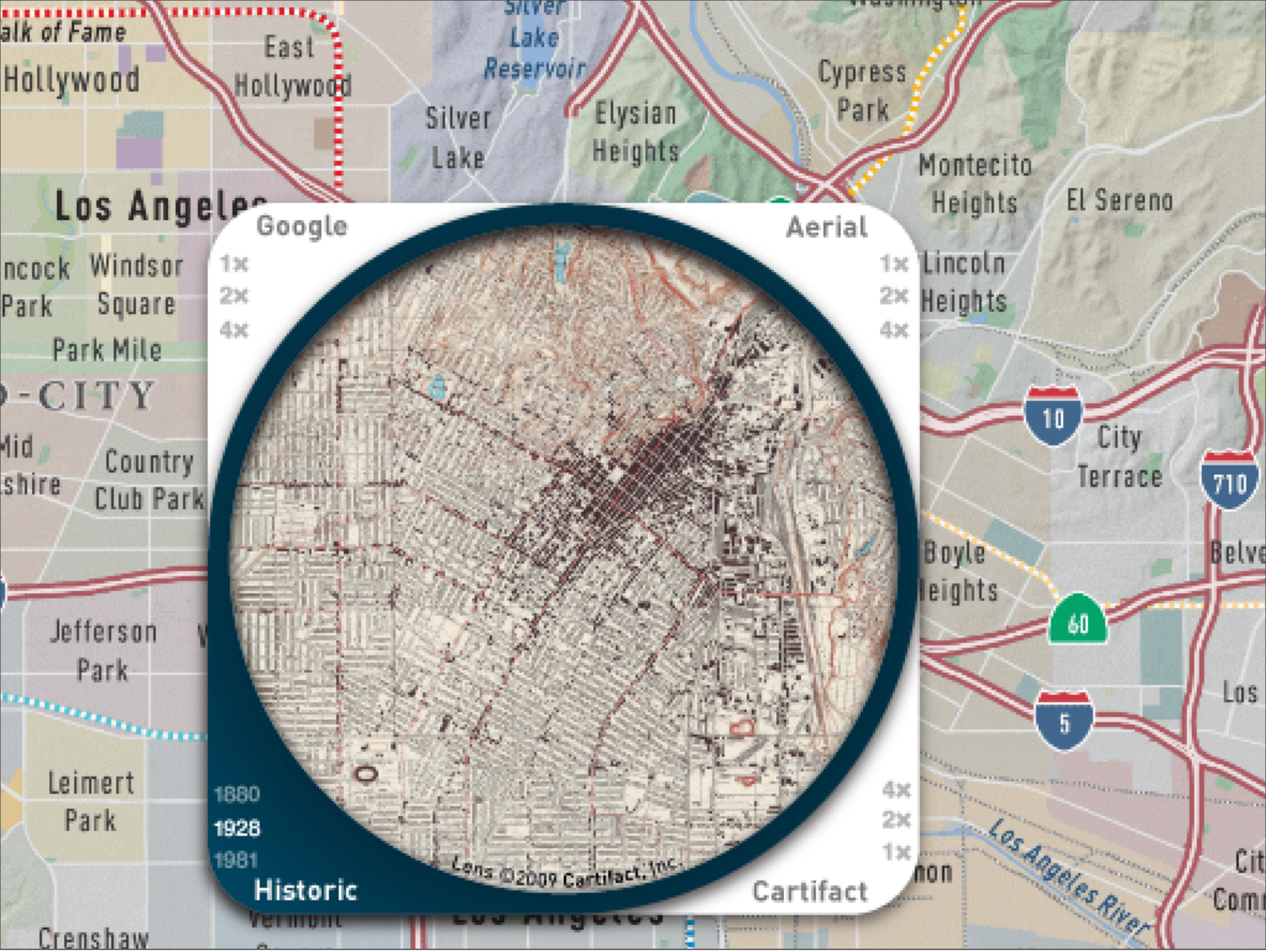






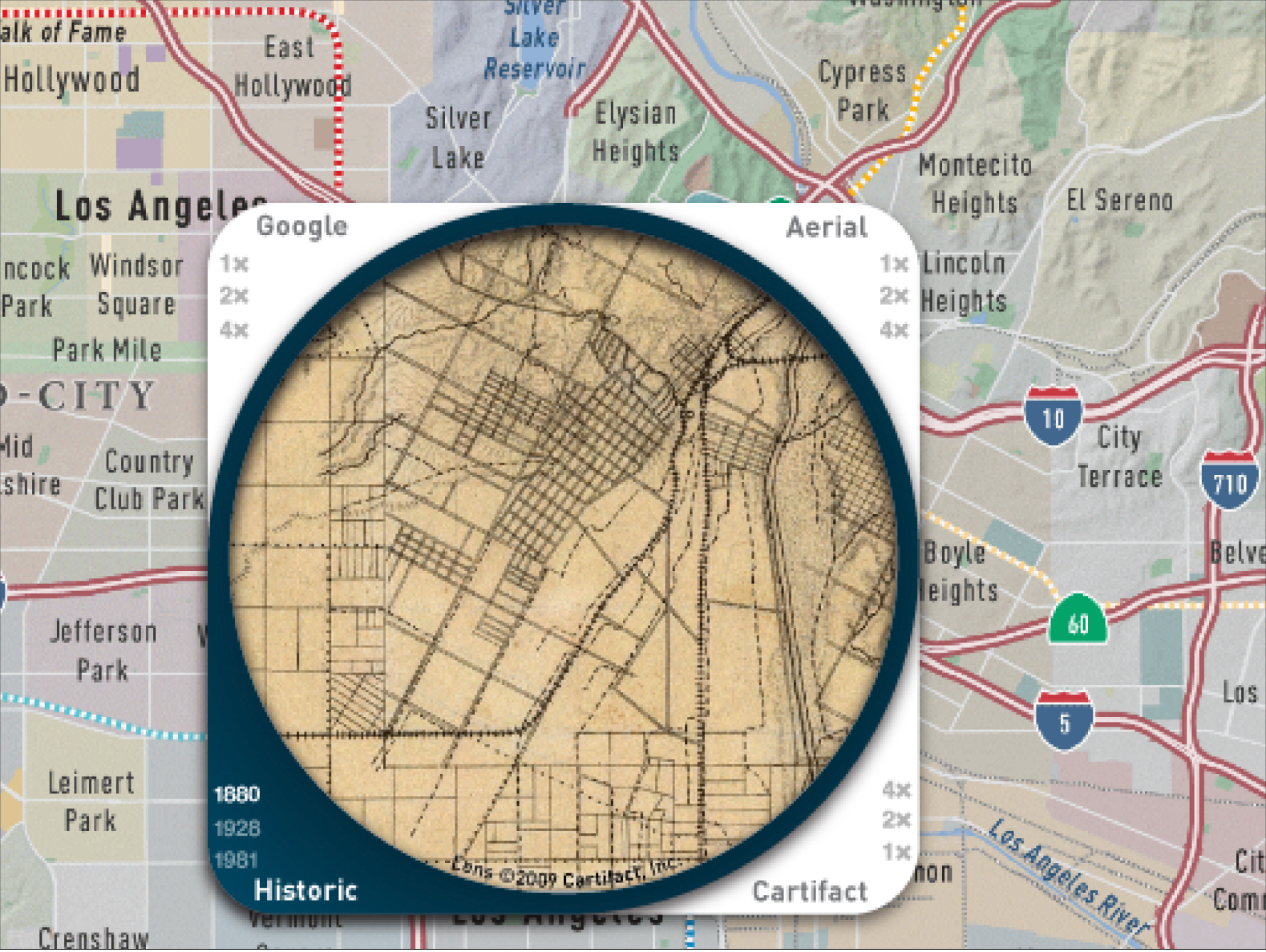
1981 USGS map





1928





1880

















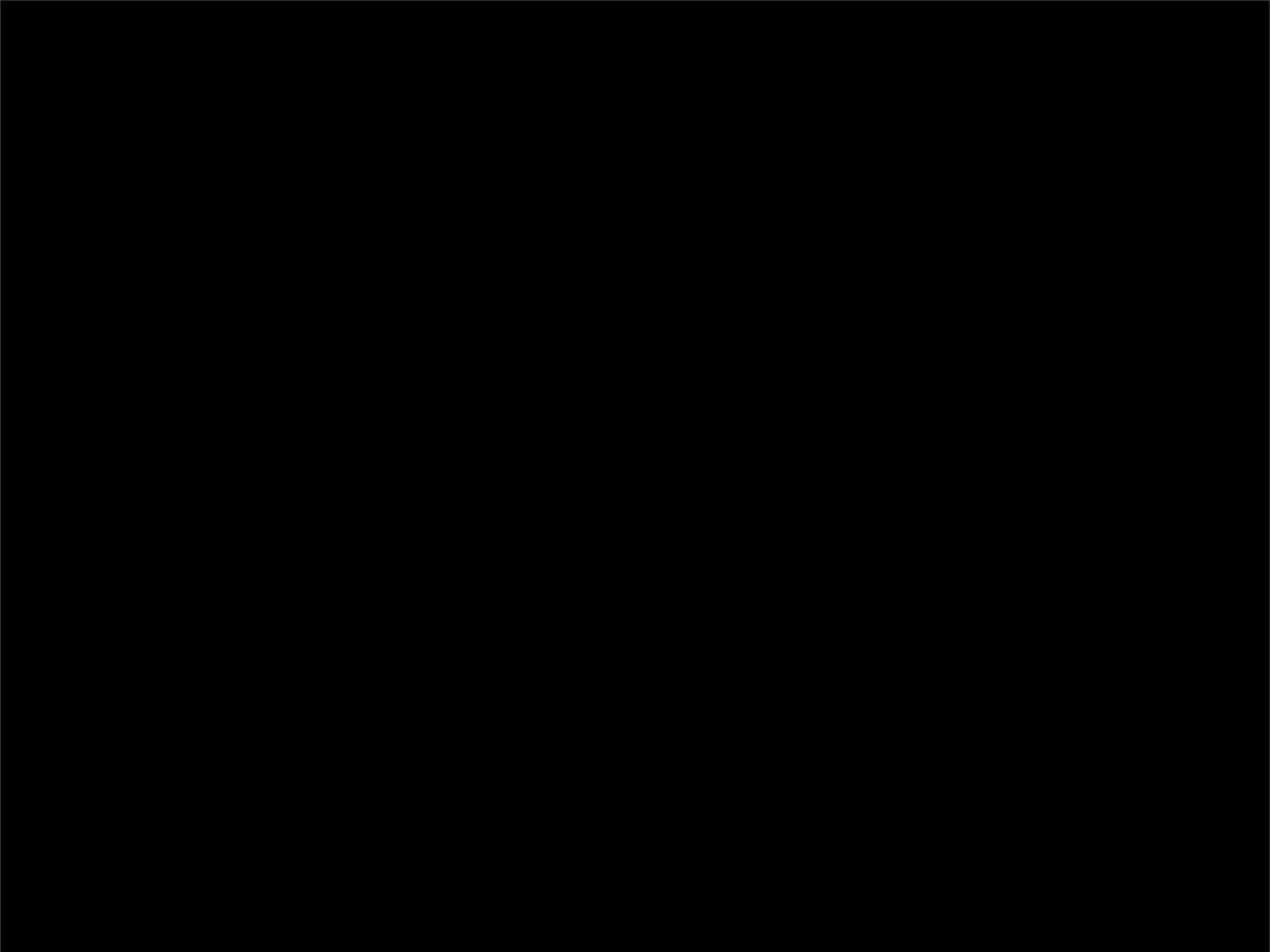


# New York

<http://oldmapapp.com>

Martin Ceperley, NYU





Hey look, it's in your pocket!





Hey look, it's in your pocket!



# Berlin

<http://dev.cdh.ucla.edu/Hypermedia>  
UCLA Hypercities

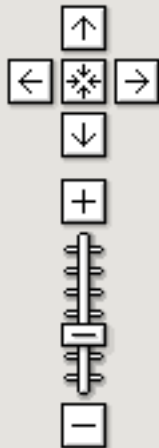




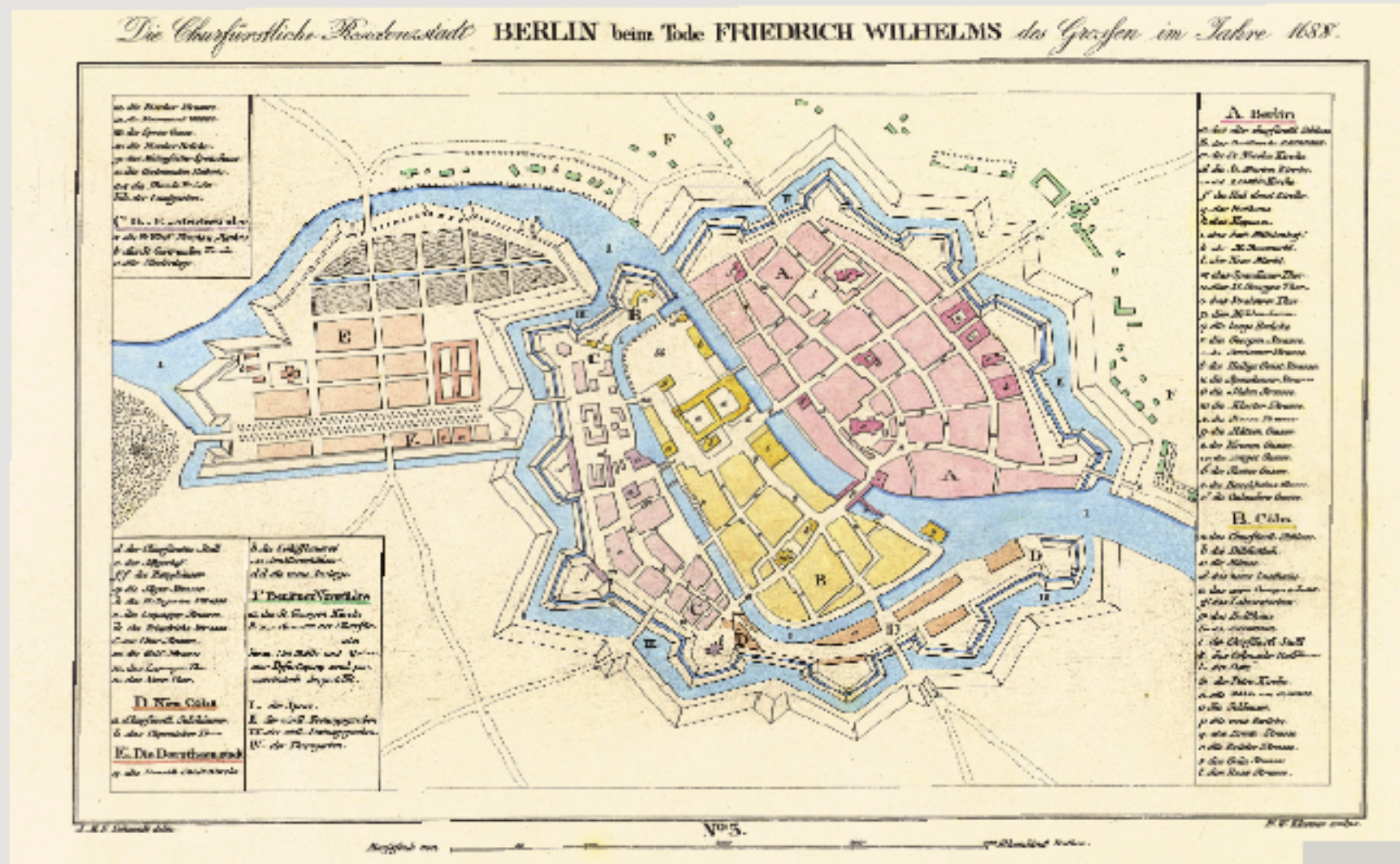
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1931	1936	1945	1947	1955	1966	1970	1977	1978	1980	1985	1986	1988	1989	2003	2008					

1237





1688



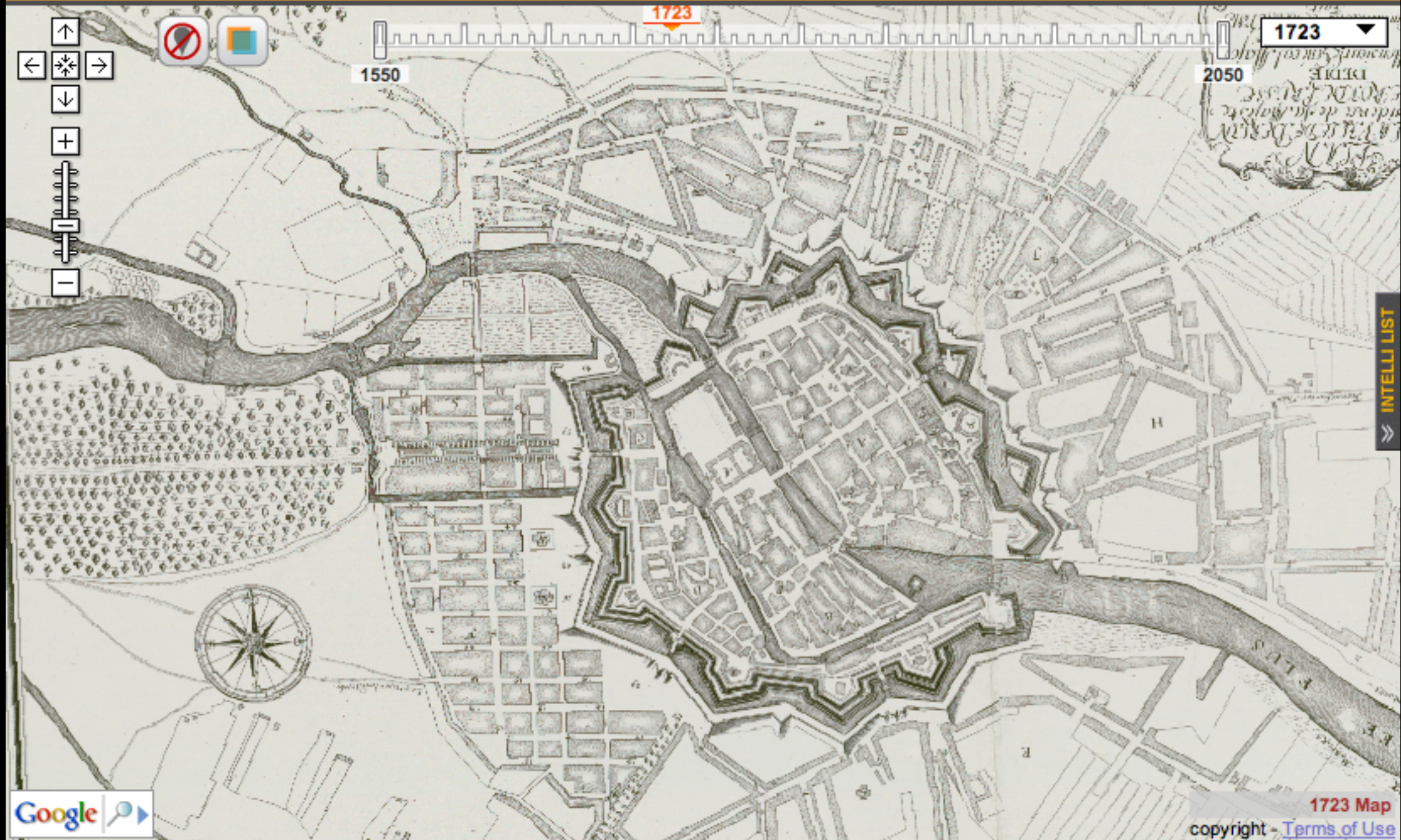
1688 Map  
copyright - [Terms of Use](#)

1237 1650 1688 1710 1723 1745 1760 1766 1772 1805 1811 1827 1835 1842 1850 1871 1876 1905 1908 1920 1926  
1931 1936 1945 1947 1955 1966 1970 1977 1978 1980 1985 1986 1988 1989 2003 2008

1688

INTELLI LIST



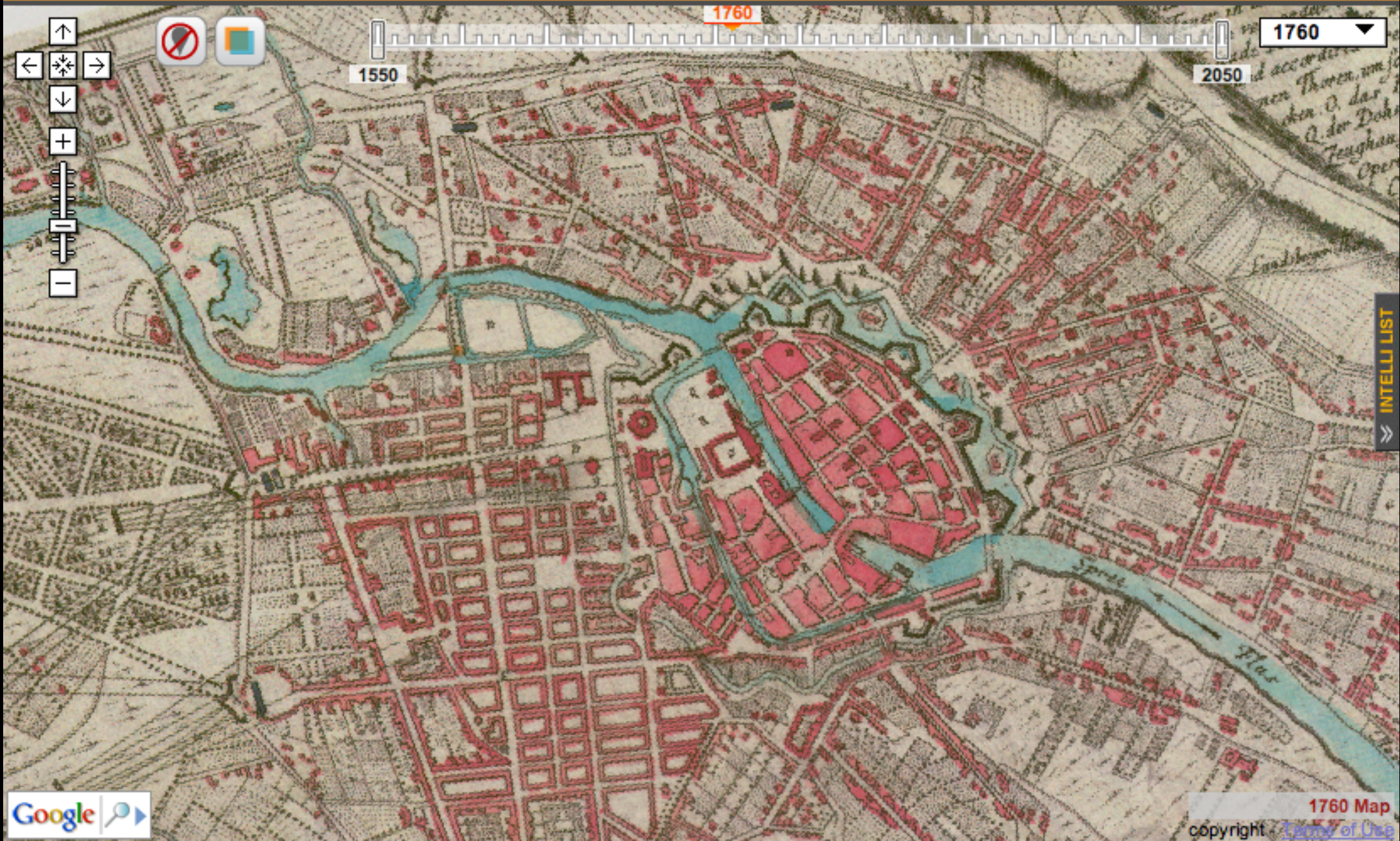


1237 1650 1688 1710 **1723** 1745 1760 1766 1772 1805 1811 1827 1835 1842 1850 1871 1876 1905 1908 1920 1926  
 1931 1936 1945 1947 1955 1966 1970 1977 1978 1980 1985 1986 1988 1989 2003 2008

1723

In this map we start to see Berlin spill out from inside its fortified boundaries



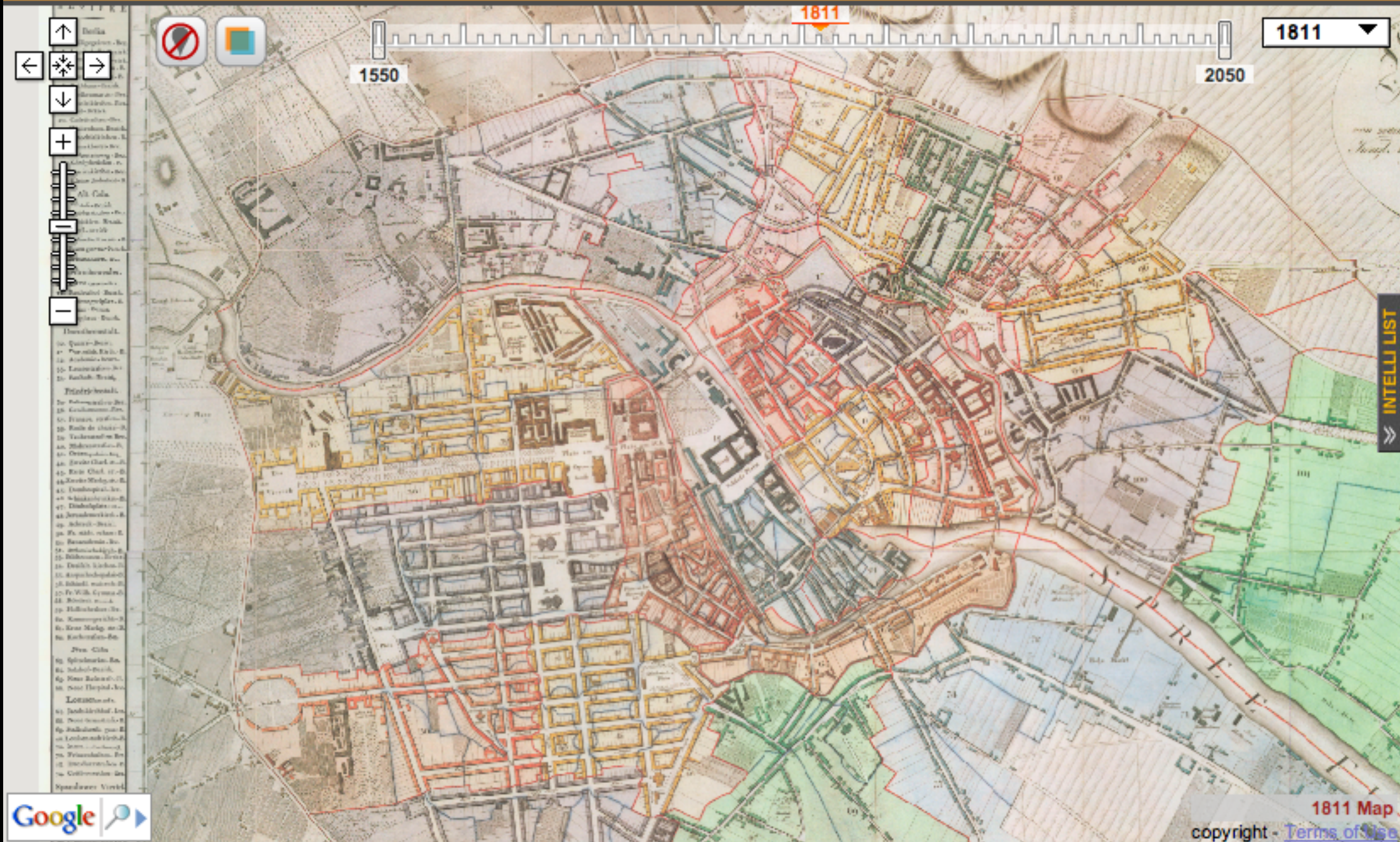


1237 1650 1688 1710 1723 1745 **1760** 1766 1772 1805 1811 1827 1835 1842 1850 1871 1876 1905 1908 1920 1926  
1931 1936 1945 1947 1955 1966 1970 1977 1978 1980 1985 1986 1988 1989 2003 2008

1760

As city walls lose importance, the south west side opens up

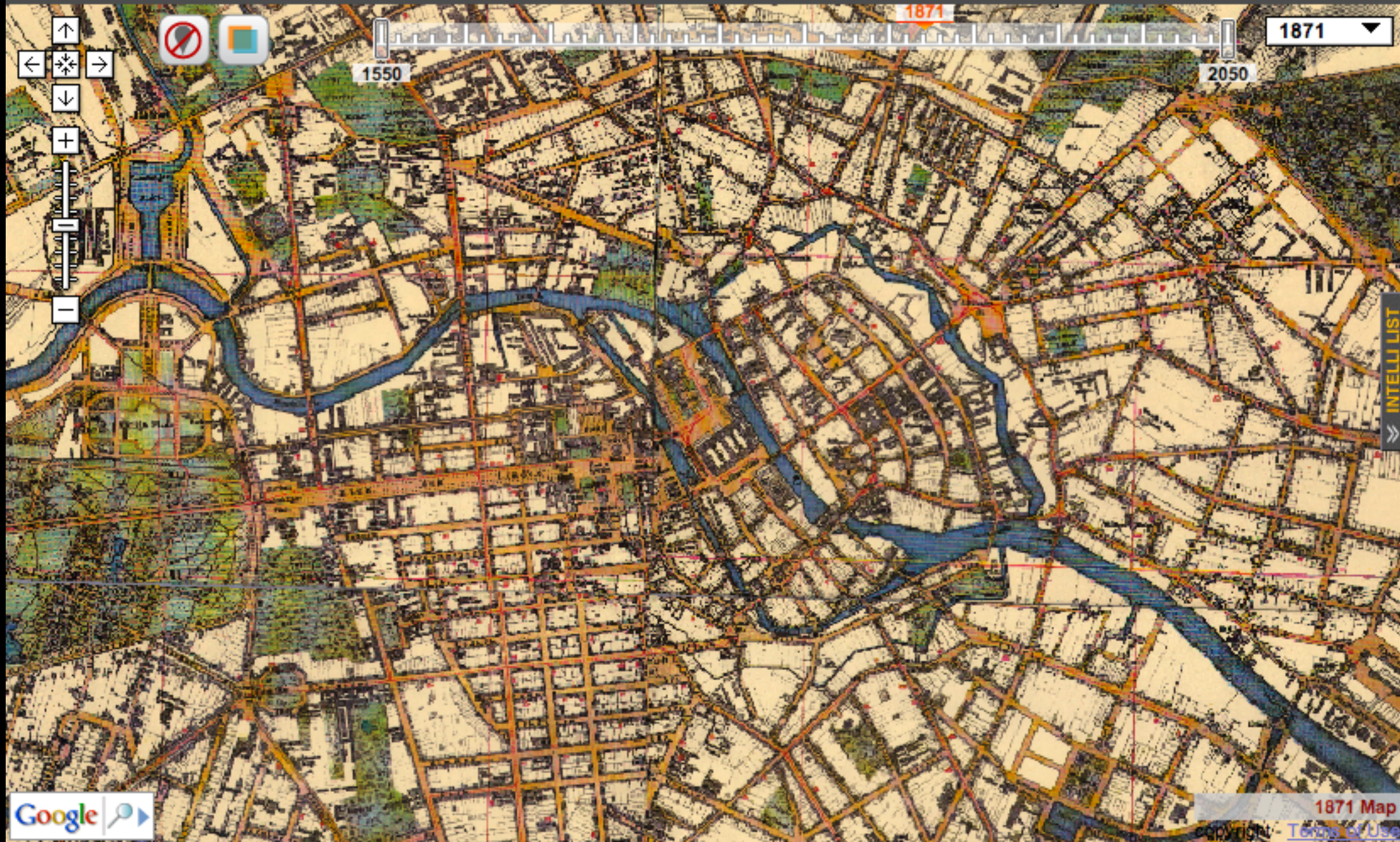




1811

There's barely any wall left in these next few views

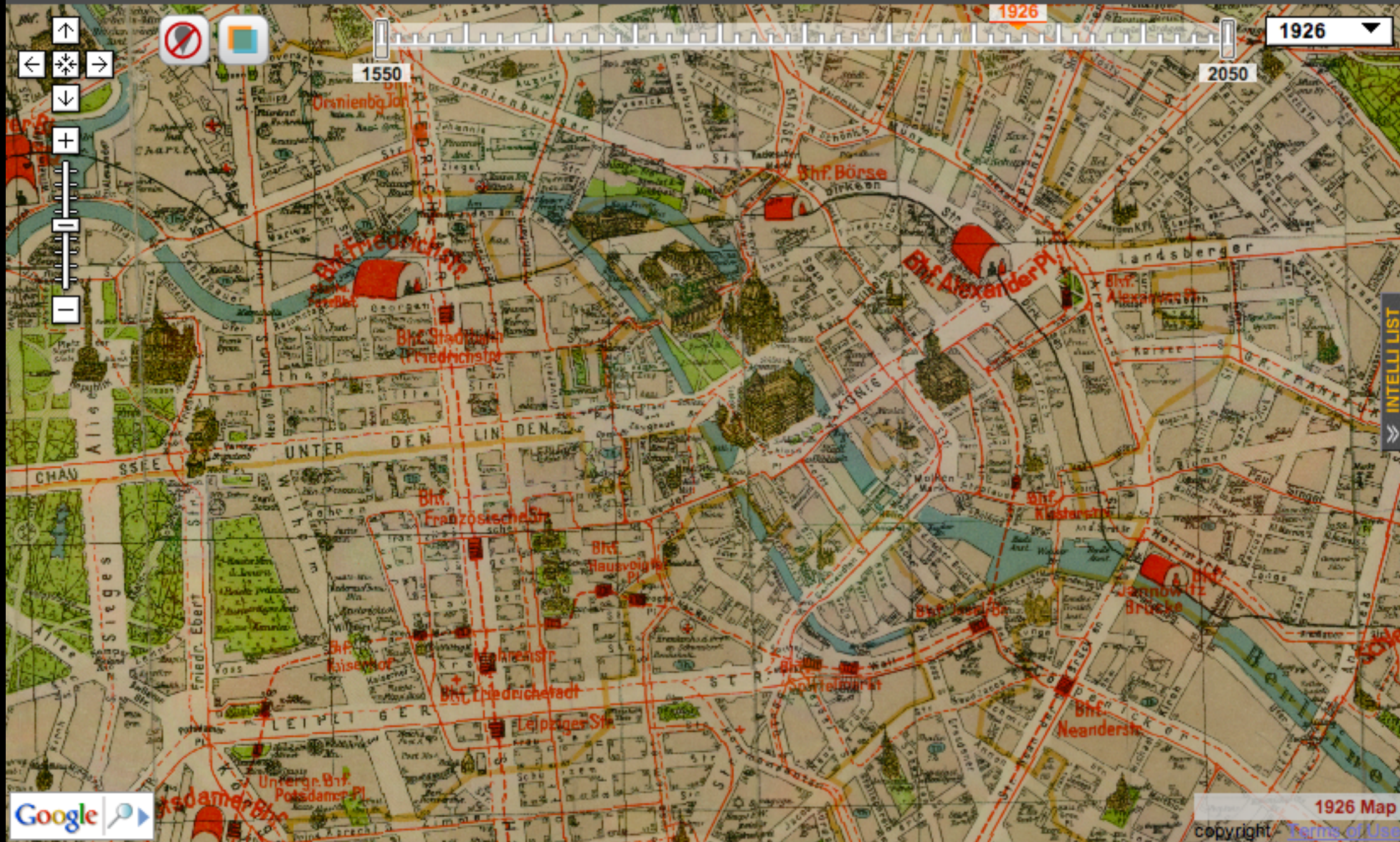




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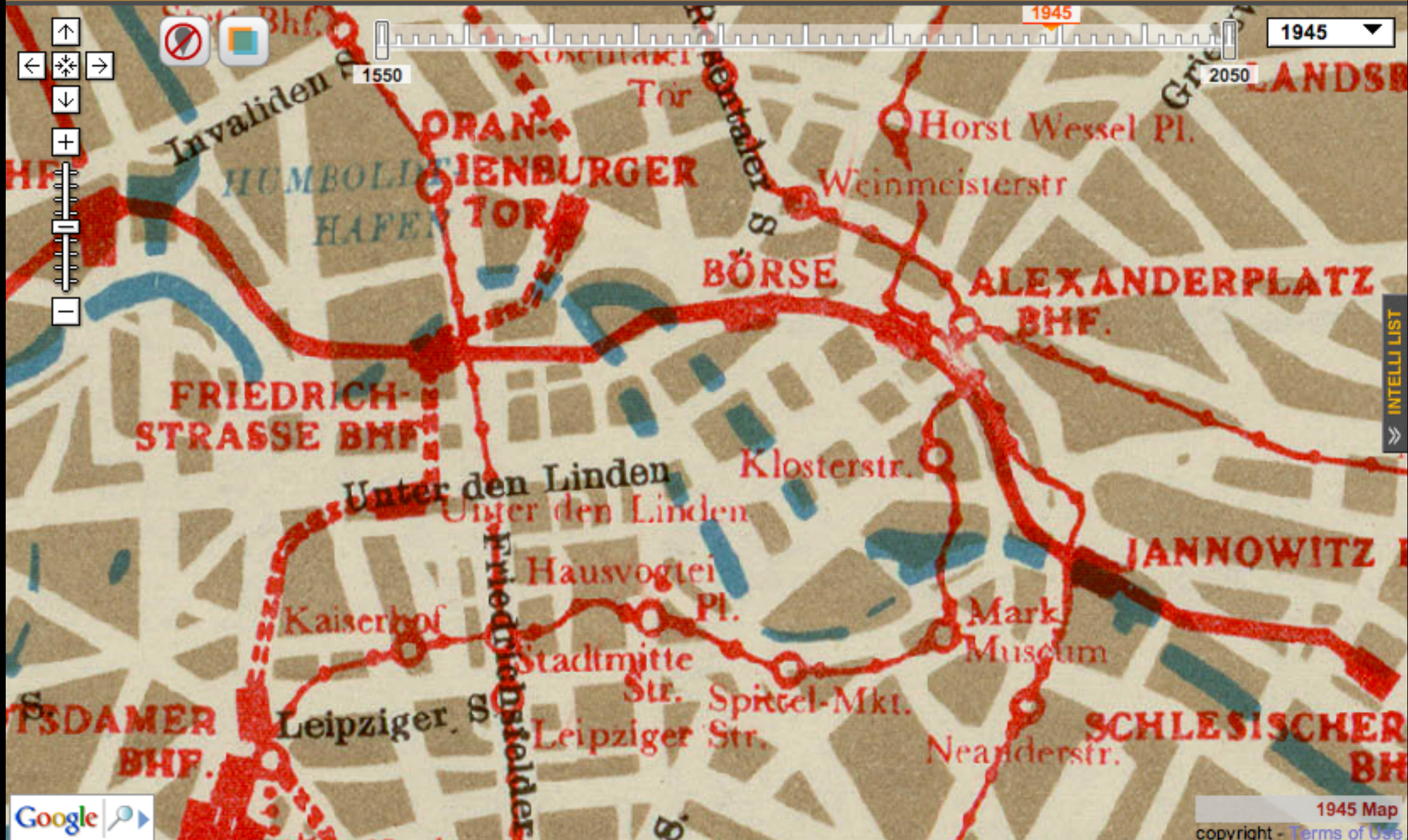
1871





1926





1945 Map  
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1237 1650 1688 1710 1723 1745 1760 1766 1772 1805 1811 1827 1835 1842 1850 1871 1876 1905 1908 1920 1926  
1931 1936 1945 1947 1955 1966 1970 1977 1978 1980 1985 1986 1988 1989 2003 2008

1945

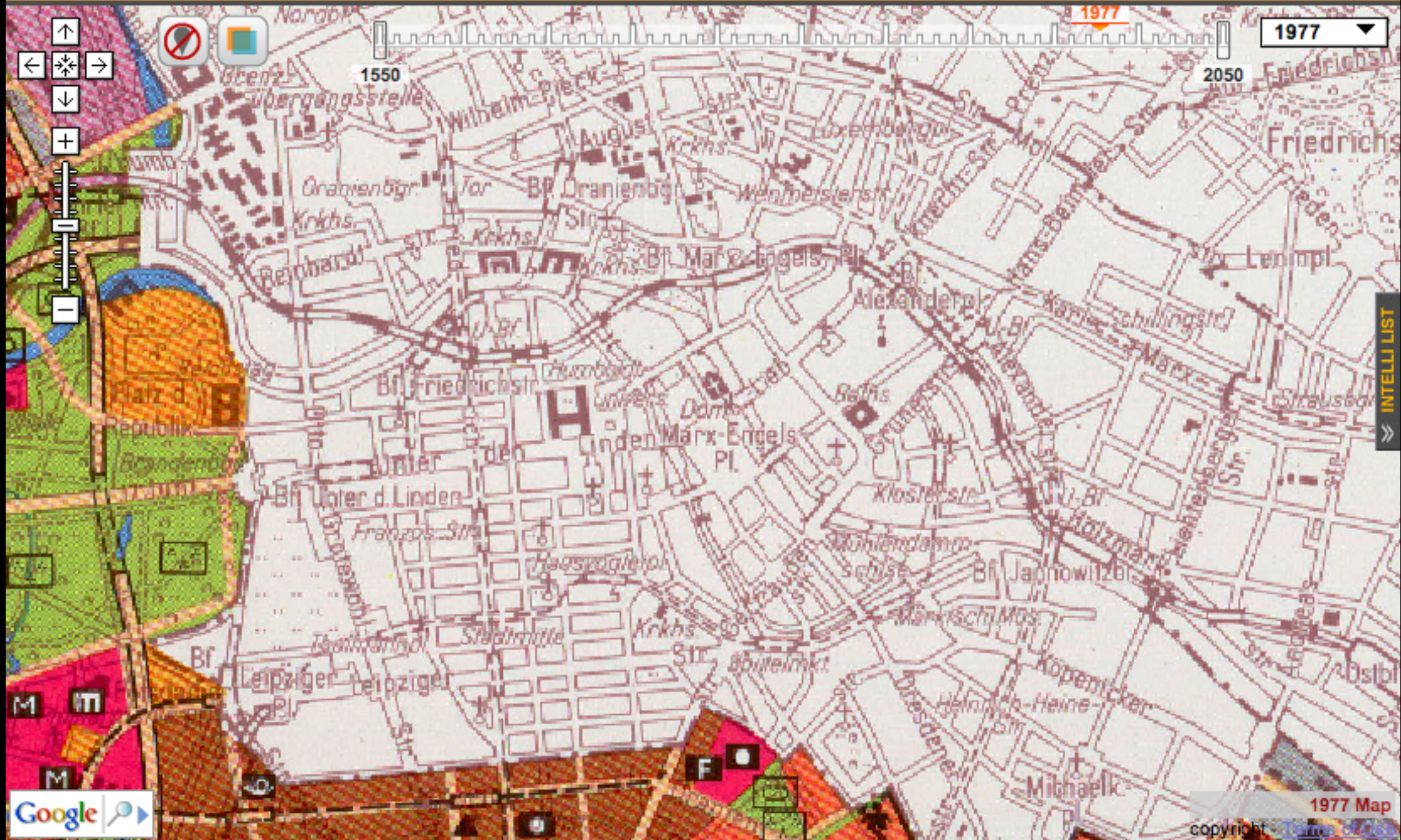




1955

Oops! after the division of Germany, this map simply doesn't acknowledge East Berlin





1237 1650 1688 1710 1723 1745 1760 1766 1772 1805 1811 1827 1835 1842 1850 1871 1876 1905 1908 1920 1926  
1931 1936 1945 1947 1955 1966 1970 1977 1978 1980 1985 1986 1988 1989 2003 2008

1970

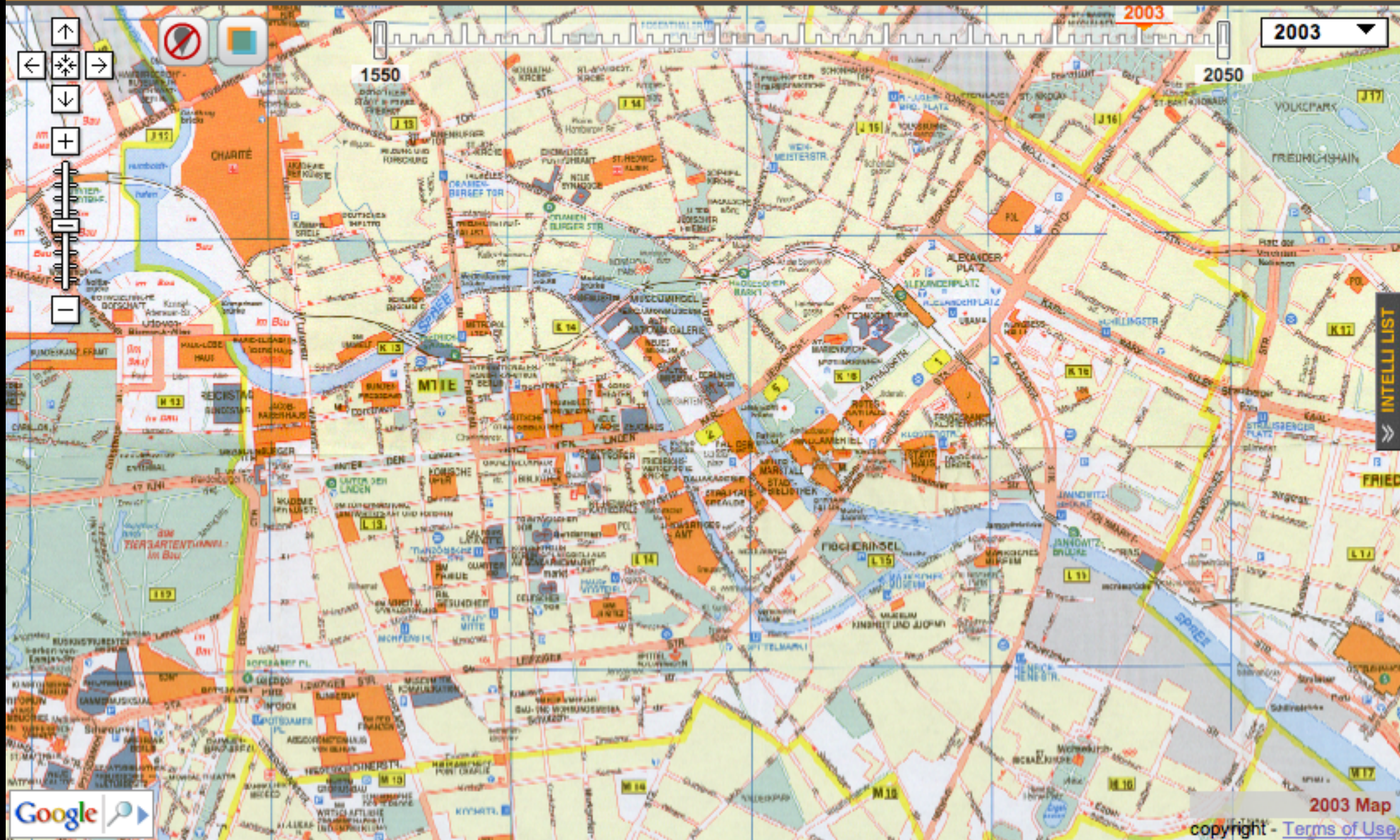




1237 1650 1688 1710 1723 1745 1760 1766 1772 1805 1811 1827 1835 1842 1850 1871 1876 1905 1908 1920 1926  
1931 1936 1945 1947 1955 1966 1970 1977 1978 1980 1985 1986 1988 1989 2003 2008

1988





1237 1650 1688 1710 1723 1745 1760 1766 1772 1805 1811 1827 1835 1842 1850 1871 1876 1905 1908 1920 1926  
1931 1936 1945 1947 1955 1966 1970 1977 1978 1980 1985 1986 1988 1989 2003 2008

2003

Today, the center of balance has shifted back to the historical center



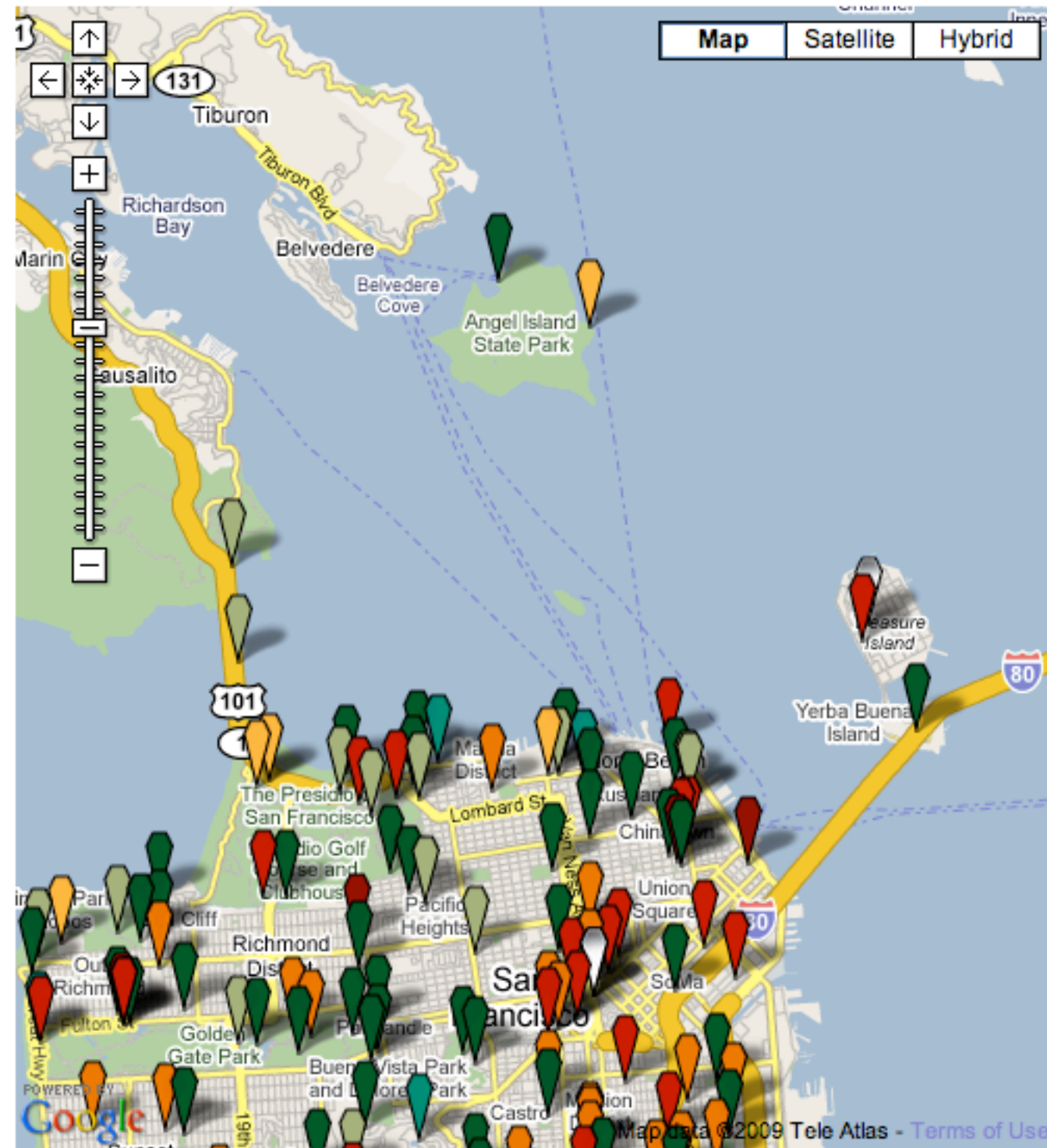
# Questions For Maps

**What is this? Whose is this? Why is  
it here now? What was here before?**





CALIFORNIA'S  
LIVING  
NEW DEAL  
PROJECT



Key:

-  Uncategorized
-  Art
-  Public buildings, excluding utility plants and airport buildings
-  Education
-  Military
-  Parks & Recreation
-  Public Utilities & Sanitation
-  Flood Erosion & Control
-  Roads, Highways, & Bridges
-  Airports, Harbors, & Ports

[View All Projects](#)

<http://livingnewdeal.berkeley.edu/map/>



# San Francisco

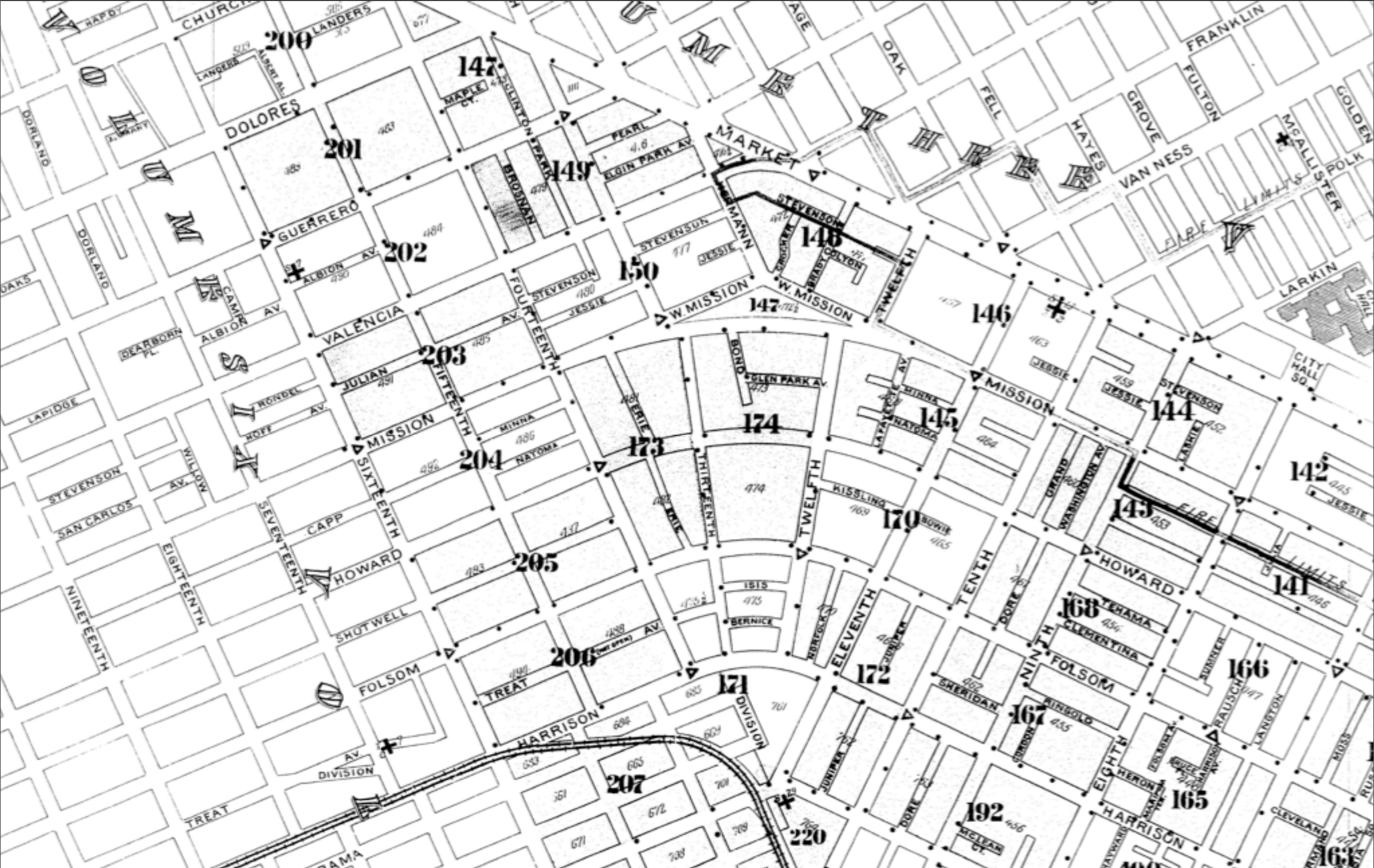
<http://www.sfgenealogy.com/sf/sanborn/sanborn.htm>

**Sanborn Fire Insurance Maps**









1899

Maps at the previous level of detail were available for San Francisco and many other cities at the turn of the century.

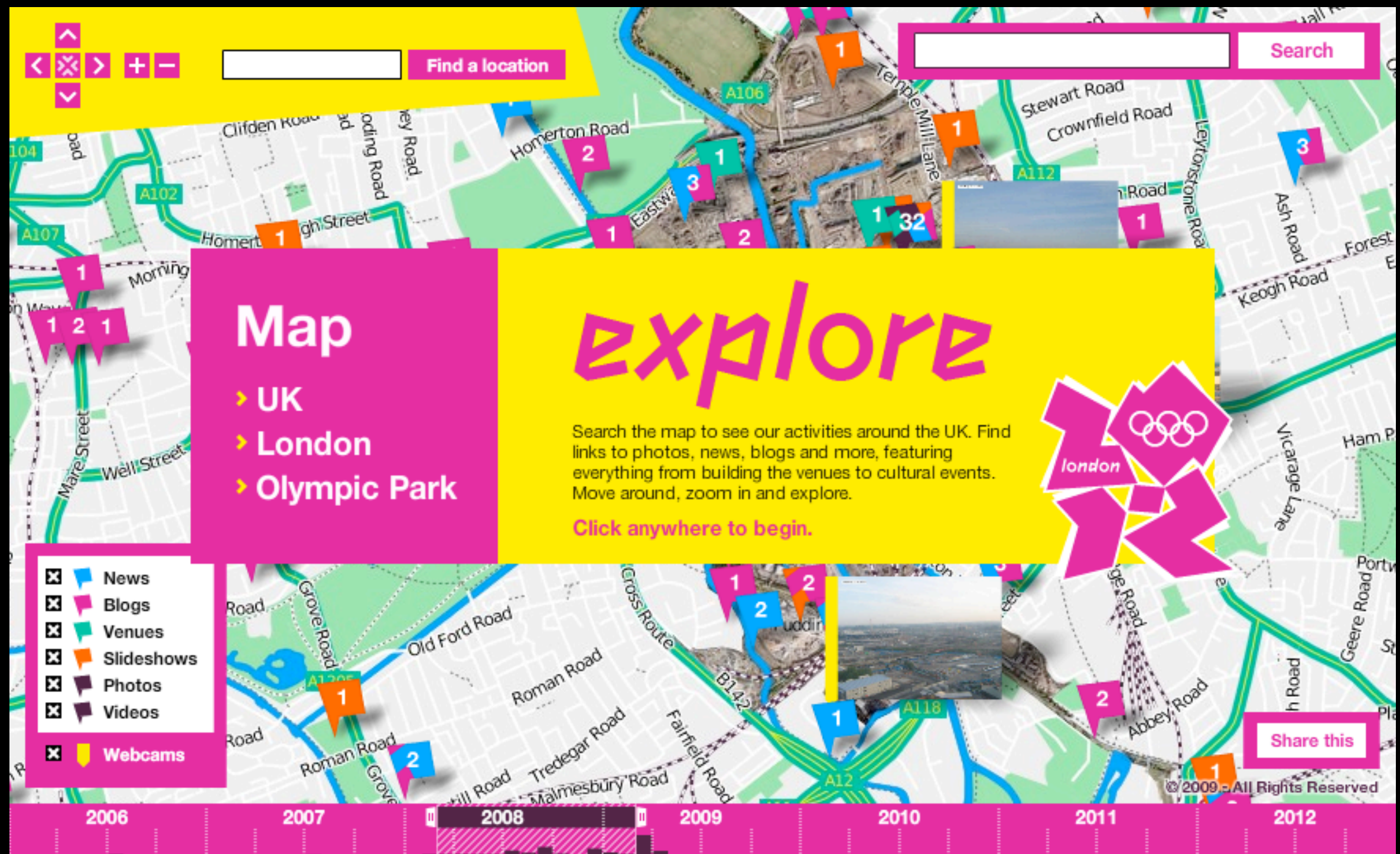


# London

<http://london2012.com/map>

**Stamen's work for LOCOG - the future!**



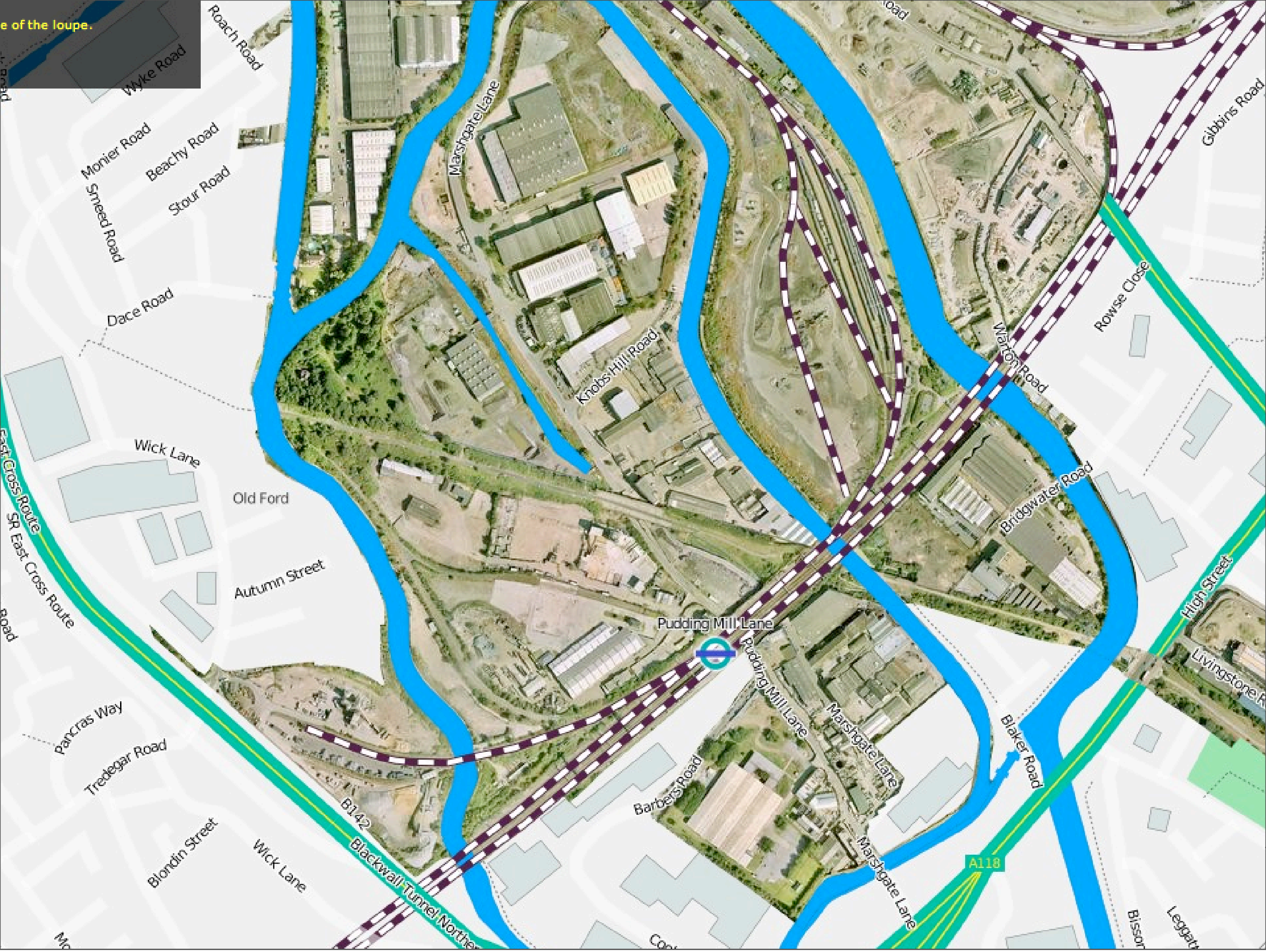


This is the official brand identity of the 2012 Olympic Games in London – their style guide was very strict about these purples and yellows.





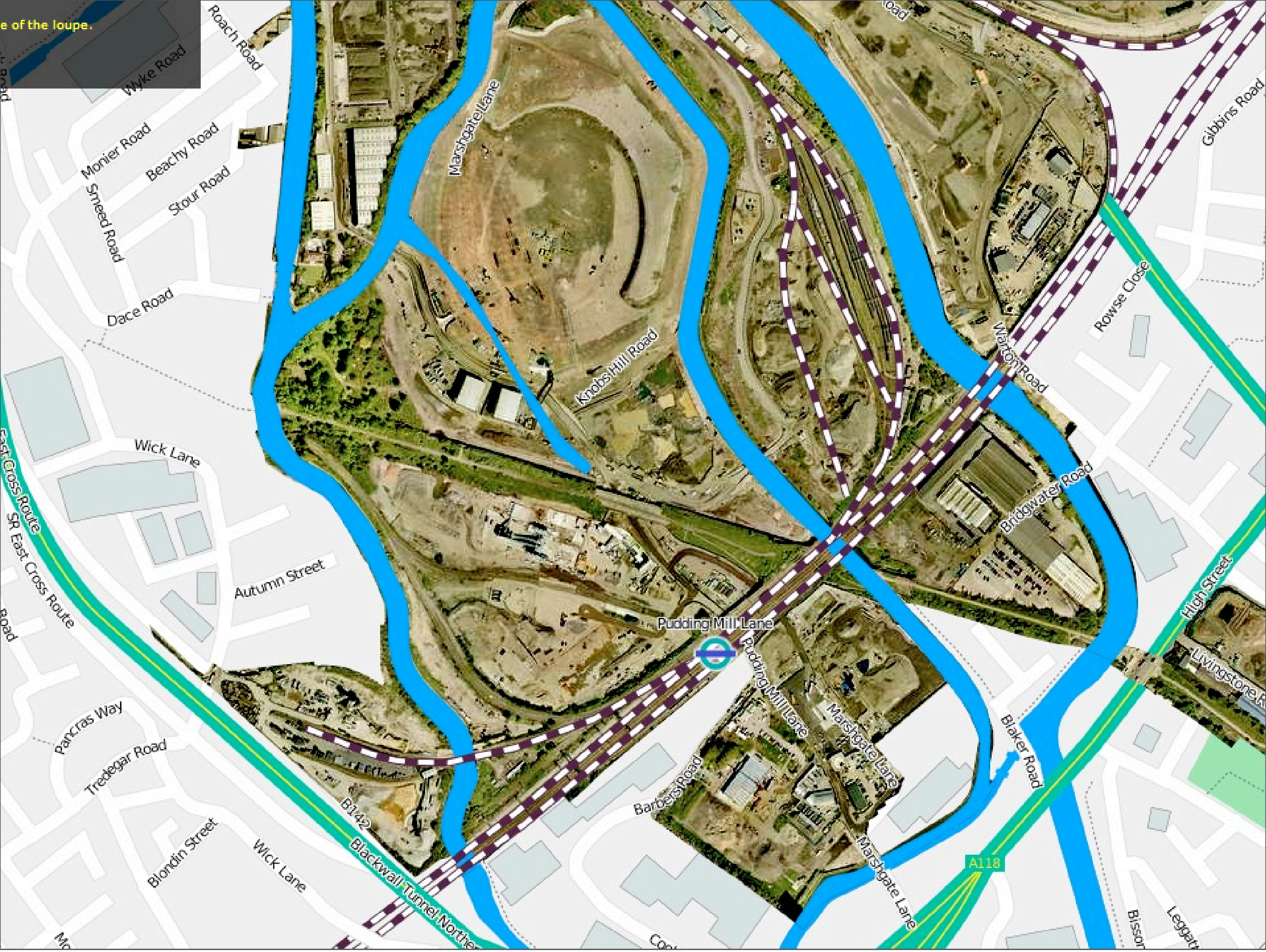




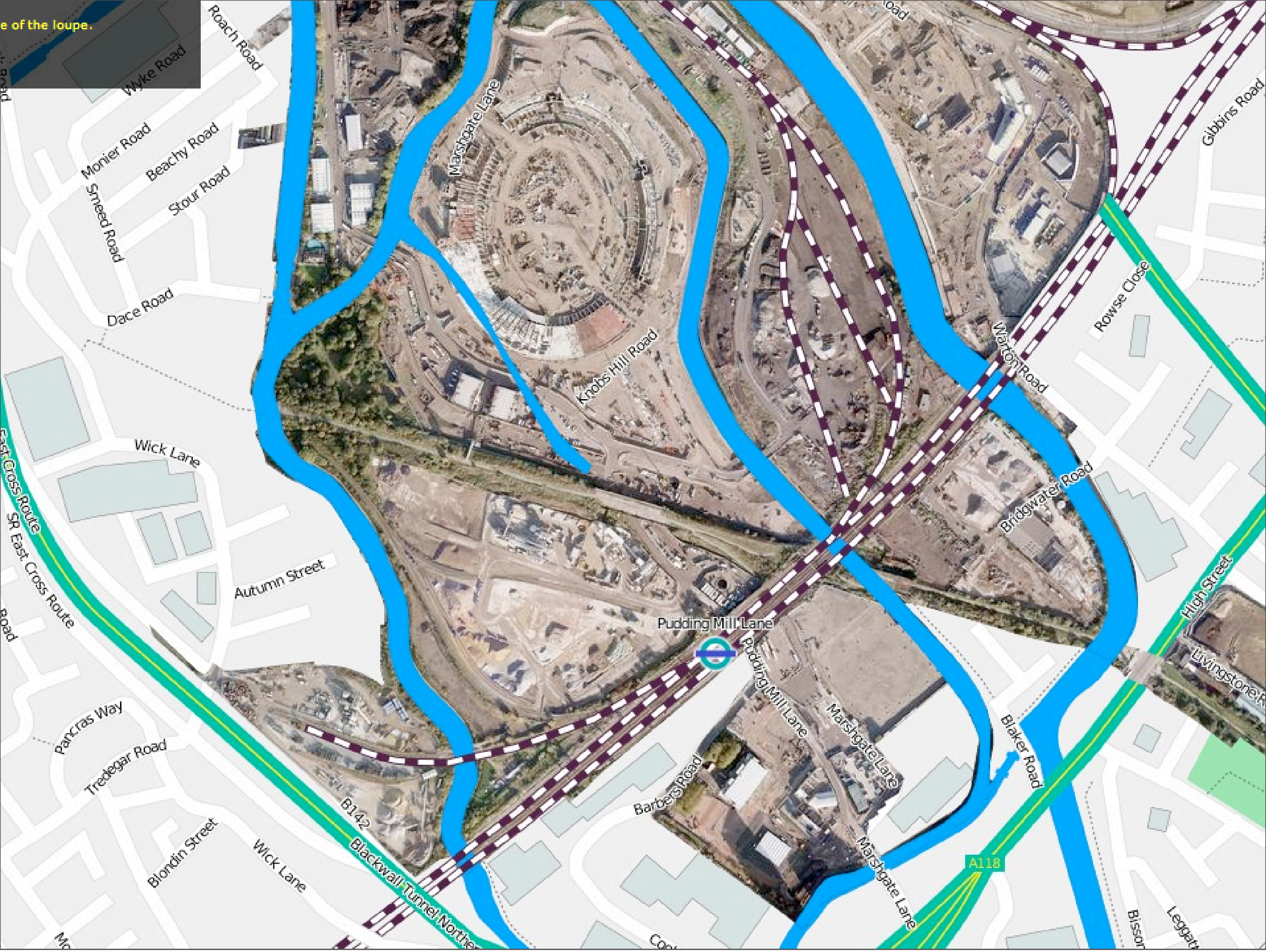
August 2007

A major issue in designing the base map was that there is this huge area in east London which is under heavy, active construction – we've applied many of these ideas about preserving pictures of places through georectification









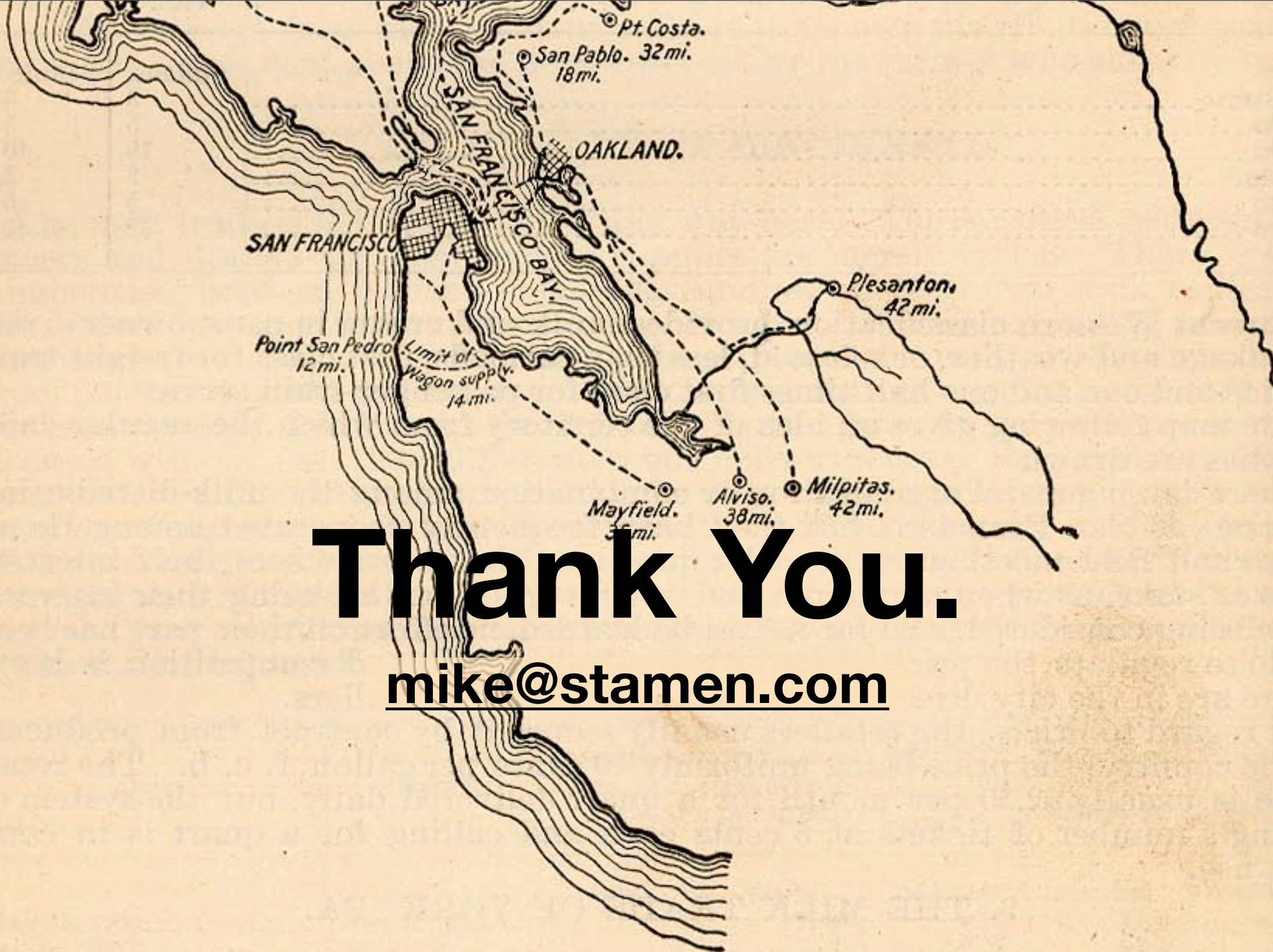
October 2008



# Rescue Maps!

**Find old maps, scan them,  
tile them, and put them online**





**Thank You.**

[mike@stamen.com](mailto:mike@stamen.com)

MILK MAP  
OF  
SAN FRANCISCO, CAL.,  
SHOWING



