

# The Master Street Plan

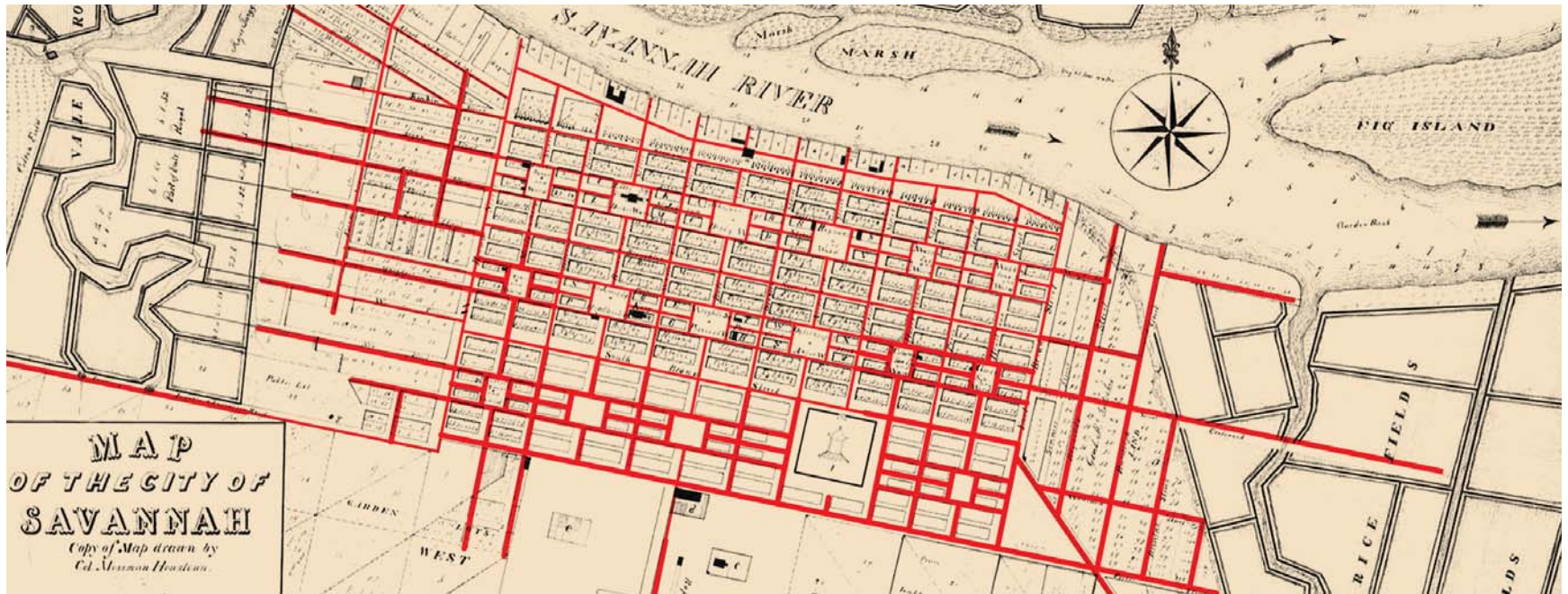
## *A Forgotten But Critical City Planning Tool*

Paul L. Knight, AICP CNU-A

Architectural and Urban Designer at Historical Concepts

[pknight@historicalconcepts.com](mailto:pknight@historicalconcepts.com)

GPA Conference, October 10, 2013



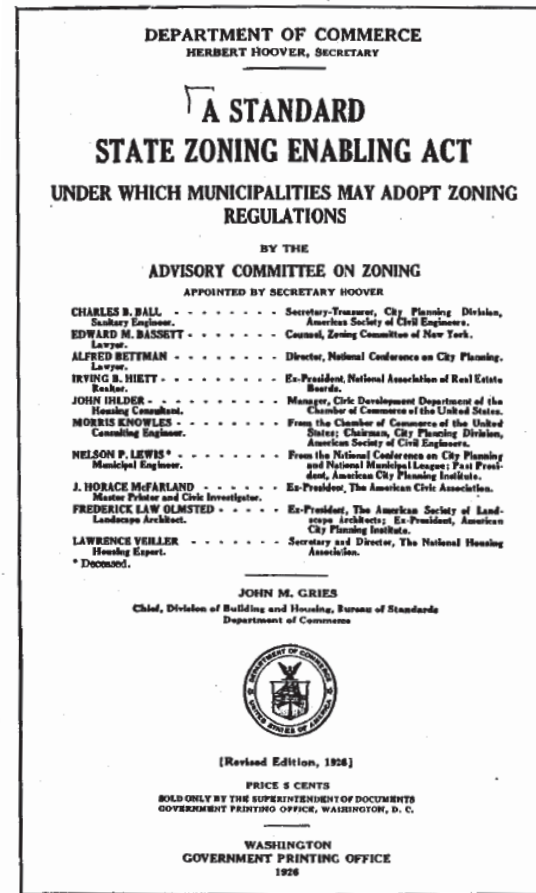
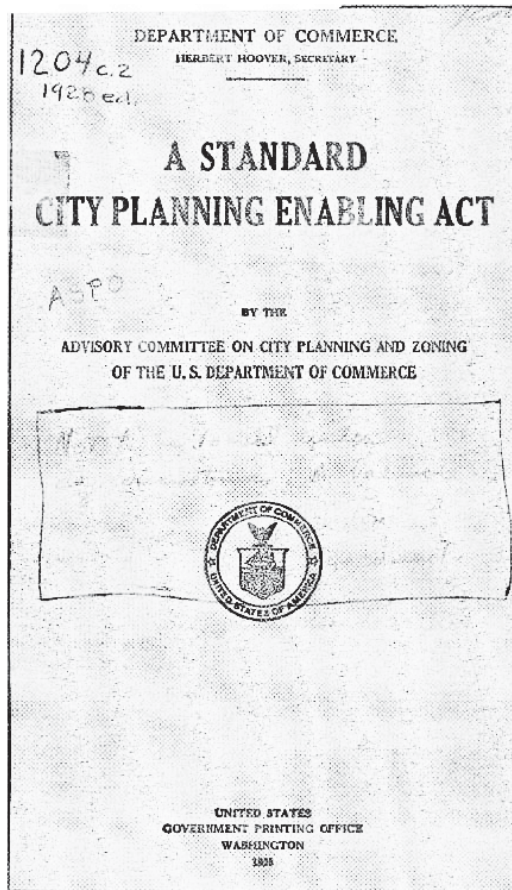
**Part I:** What is a comprehensive plan?

**Part II:** What is a master street plan?

**Part III:** What are the benefits of a master street plan?

# Part I: What is a Comprehensive Plan?

3



## The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013

# What is a Comprehensive Plan?

---

*“It shall be the function and duty of the commission to make and adopt a master plan. Such plan...shall show the commission’s recommendations for the development of said territory, including, among other things, the general location, character, and extent of streets, viaducts, subways, bridges, waterways, water fronts, boulevards, parkways, playgrounds, squares, parks, aviation fields, and other public ways, grounds and open spaces, the general location of public buildings and other public property, and the general location and extent of public utilities and terminals, whether publicly or privately owned or operated, for water, light, sanitation, transportation, communication, power, and other purposes; also the removal, relocation, widening, narrowing, vacating, abandonment, change of use or extension of any of the foregoing ways, grounds, opens spaces, buildings, property, utilities, or terminals; as well as a zoning plan.”*

A Standard City Planning Enabling Act, 1928, pp. 13-14

*“It shall be the function and duty of the commission to make and adopt a master plan. Such plan...shall show the commission’s recommendations for the development of said territory, including, among other things, the general location, character, and extent of streets, viaducts, subways, bridges, waterways, water fronts, boulevards, parkways, playgrounds, squares, parks, aviation fields, and other **public ways**, grounds and open spaces, the general location of **public buildings** and other **public property**, and the general location and extent of **public utilities** and terminals, whether publicly or privately owned or operated, for water, light, sanitation, transportation, communication, power, and other purposes; also the removal, relocation, widening, narrowing, vacating, abandonment, change of use or extension of any of the foregoing ways, grounds, opens spaces, buildings, property, utilities, or terminals; as well as a **zoning plan**.”*

A Standard City Planning Enabling Act, 1928, pp. 13-14



## Define: Zoning

*“Zoning is the application of common sense and fairness to the public regulations governing the use of **private** real estate.”*

A Zoning Primer, 1926, p. 1

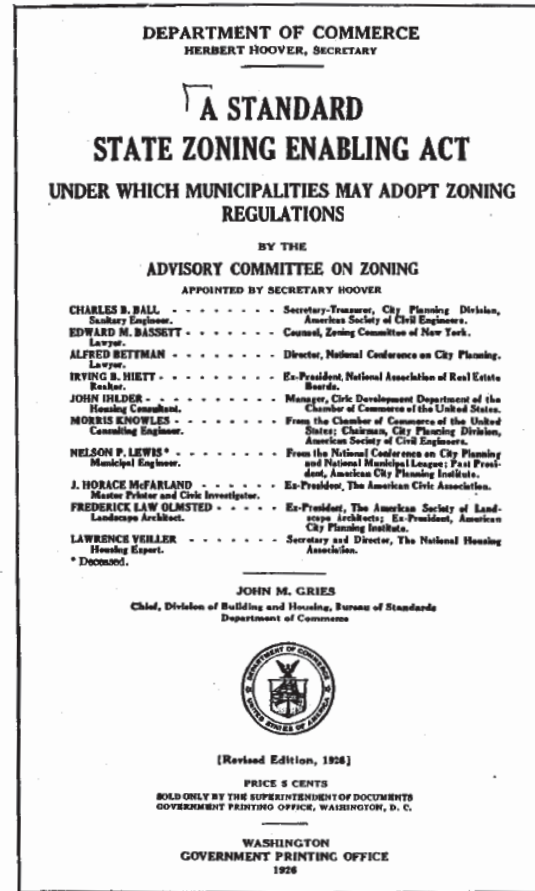
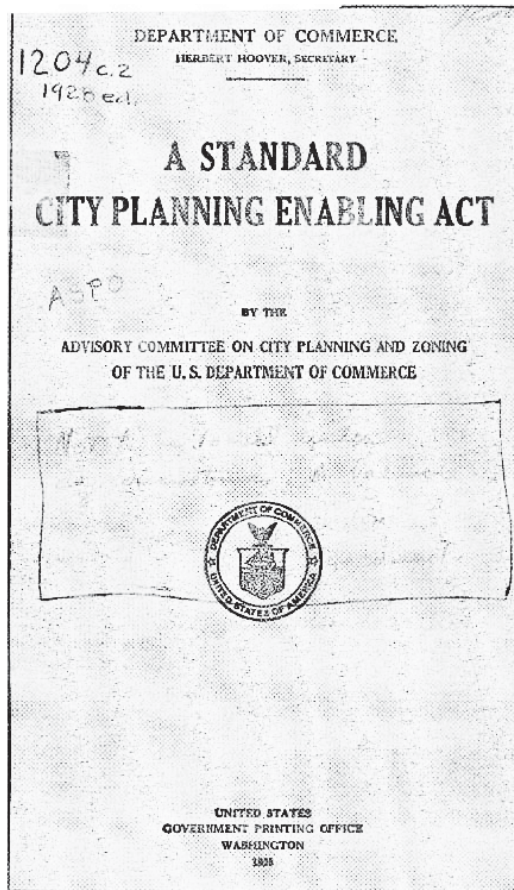
# What is a Comprehensive Plan?

---

*“It shall be the function and duty of the commission to make and adopt a master plan. Such plan...shall show the commission’s recommendations for the development of said territory, including, among other things, the general location, character, and extent of streets, viaducts, subways, bridges, waterways, water fronts, boulevards, parkways, playgrounds, squares, parks, aviation fields, and other **public ways**, grounds and open spaces, the general location of **public buildings** and other **public property**, and the general location and extent of **public utilities** and terminals, whether publicly or privately owned or operated, for water, light, sanitation, transportation, communication, power, and other purposes; also the removal, relocation, widening, narrowing, vacating, abandonment, change of use or extension of any of the foregoing ways, grounds, opens spaces, buildings, property, utilities, or terminals; as well as a **zoning plan**.”*

A Standard City Planning Enabling Act, 1928, pp. 13-14

# What is a Comprehensive Plan?



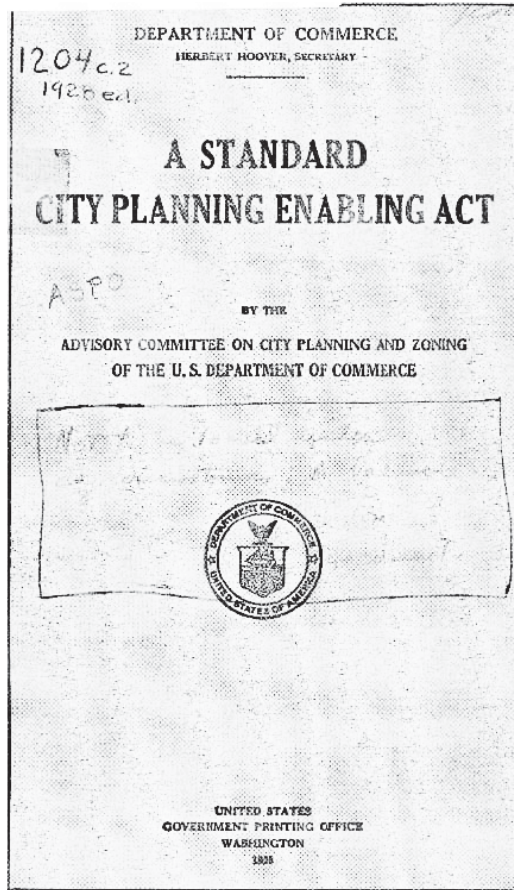
## The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013

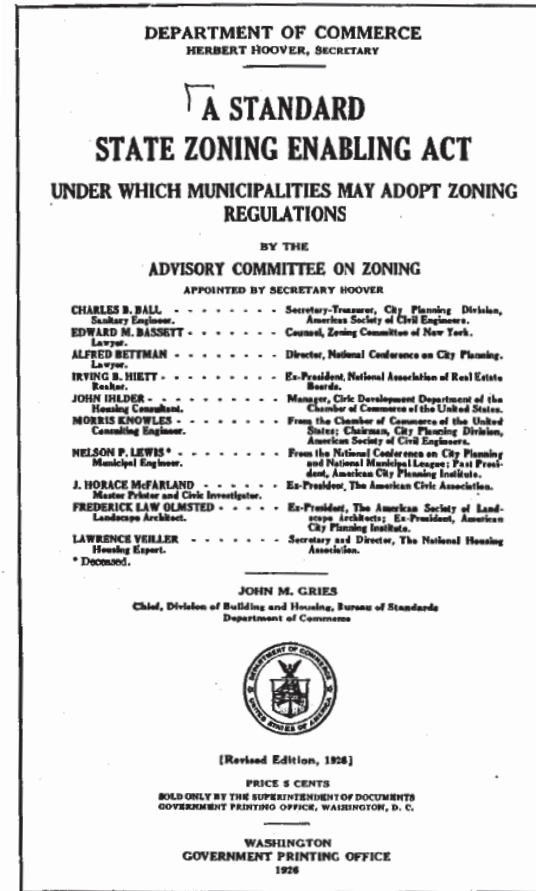


# What is a Comprehensive Plan?

## PUBLIC



## PRIVATE



# What is a Comprehensive Plan?

## ***PUBLIC*** ***MASTER STREET*** ***PLAN***



## ***PRIVATE*** ***ZONING*** ***PLAN***



### **The Master Street Plan: A Forgotten But Critical City Planning Tool**

*“It shall be the function and duty of the commission to make and adopt a master plan. Such plan...shall show the commission’s recommendations for the development of said territory, including, among other things, the general location, character, and extent of streets, viaducts, subways, bridges, waterways, water fronts, boulevards, parkways, playgrounds, squares, parks, aviation fields, and other public ways, grounds and open spaces, the general location of public buildings and other public property, and the general location and extent of public utilities and terminals, whether publicly or privately owned or operated, for water, light, sanitation, transportation, communication, power, and other purposes; also the removal, relocation, widening, narrowing, vacating, abandonment, change of use or extension of any of the foregoing ways, grounds, opens spaces, buildings, property, utilities, or terminals; **as well as a zoning plan.**”*

A Standard City Planning Enabling Act, 1928, pp. 13-14

***“Zoning is simply one phase of city planning”***

A Standard City Planning Enabling Act, 1928, p. 16

## Redefine: Comprehensive Plan

*“A general plan to control and direct the use and development of property in a municipality or a large part of it by dividing it into districts according to the present and potential use of the properties.”*

Bishop v. Board of Zoning Appeals of the City of New Haven (1947)



## Redefine: Comprehensive Plan

*“A general plan to control and direct the use and development of property in a municipality or a large part of it by dividing it into districts according to the present and potential use of the properties.”*

Bishop v. Board of Zoning Appeals of the City of New Haven (1947)

### **This definition implies that...**

- 1. A comprehensive plan only requires a land use map. The necessity of a master street plan is thus dropped.**
- 2. The public and private components of city planning are combined into one map.**



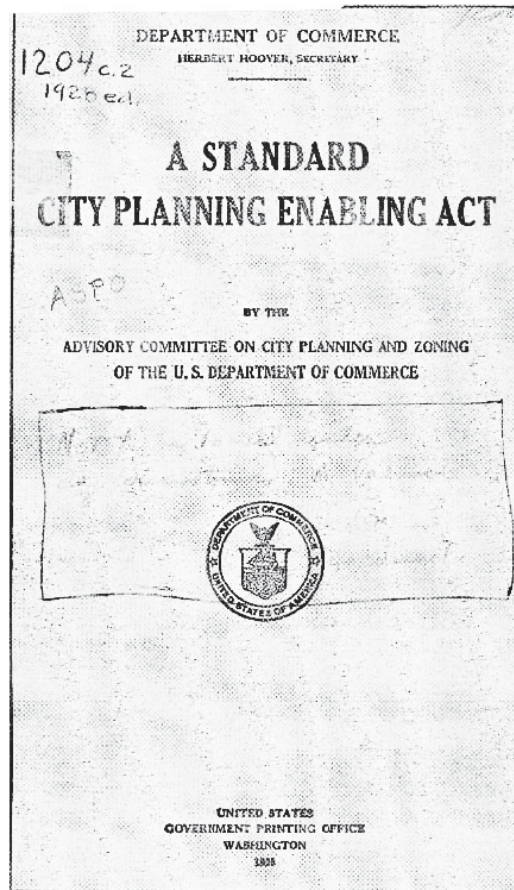




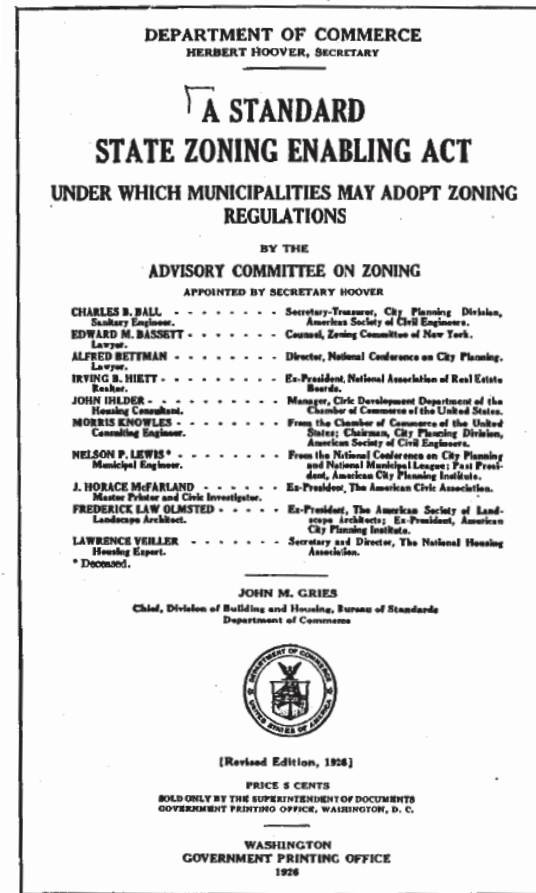
# What is a Comprehensive Plan?

17

## PUBLIC

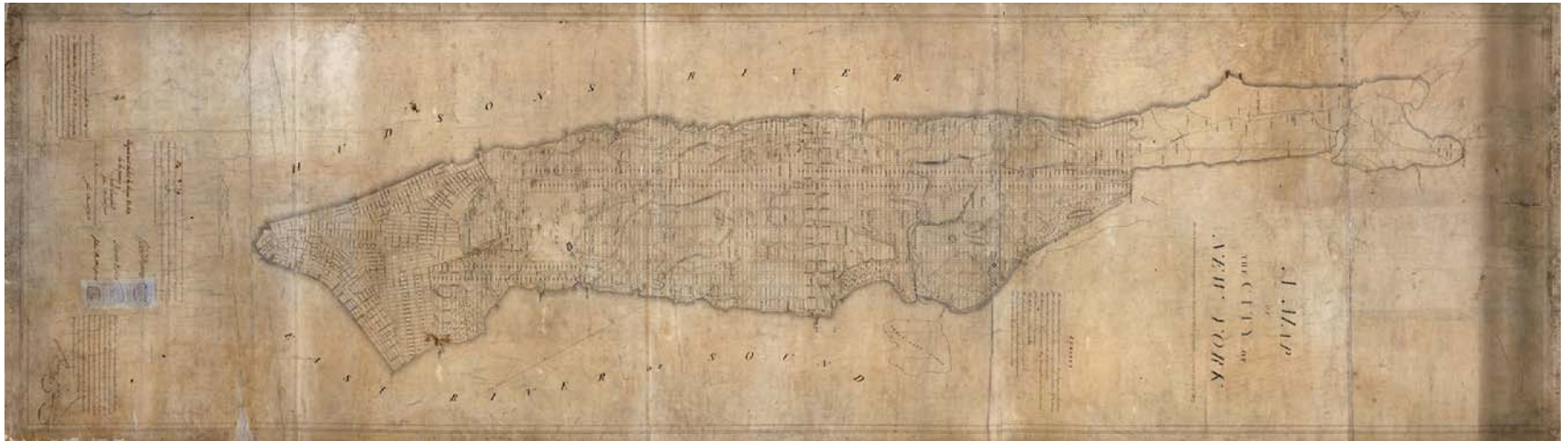


## PRIVATE



## The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013



Commissioner's Plan of Manhattan, 1811

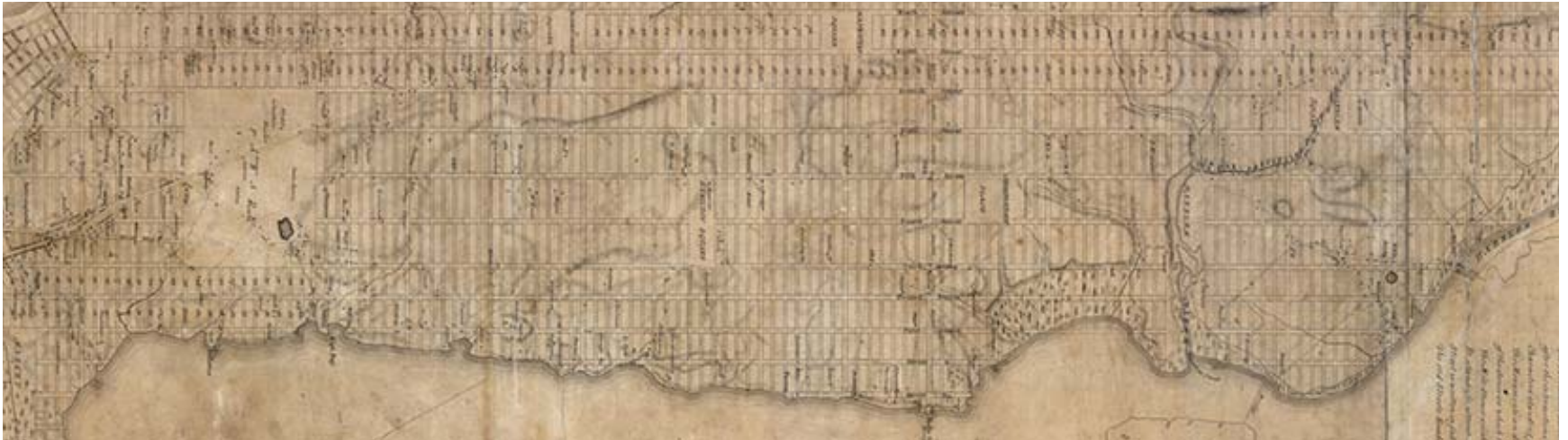
“The general location, character, and extent of streets...”

Advisory Committee on City Planning and Zoning of the U.S. Department of Commerce, 1928, pp. 13-14



# What is a Master Street Plan?

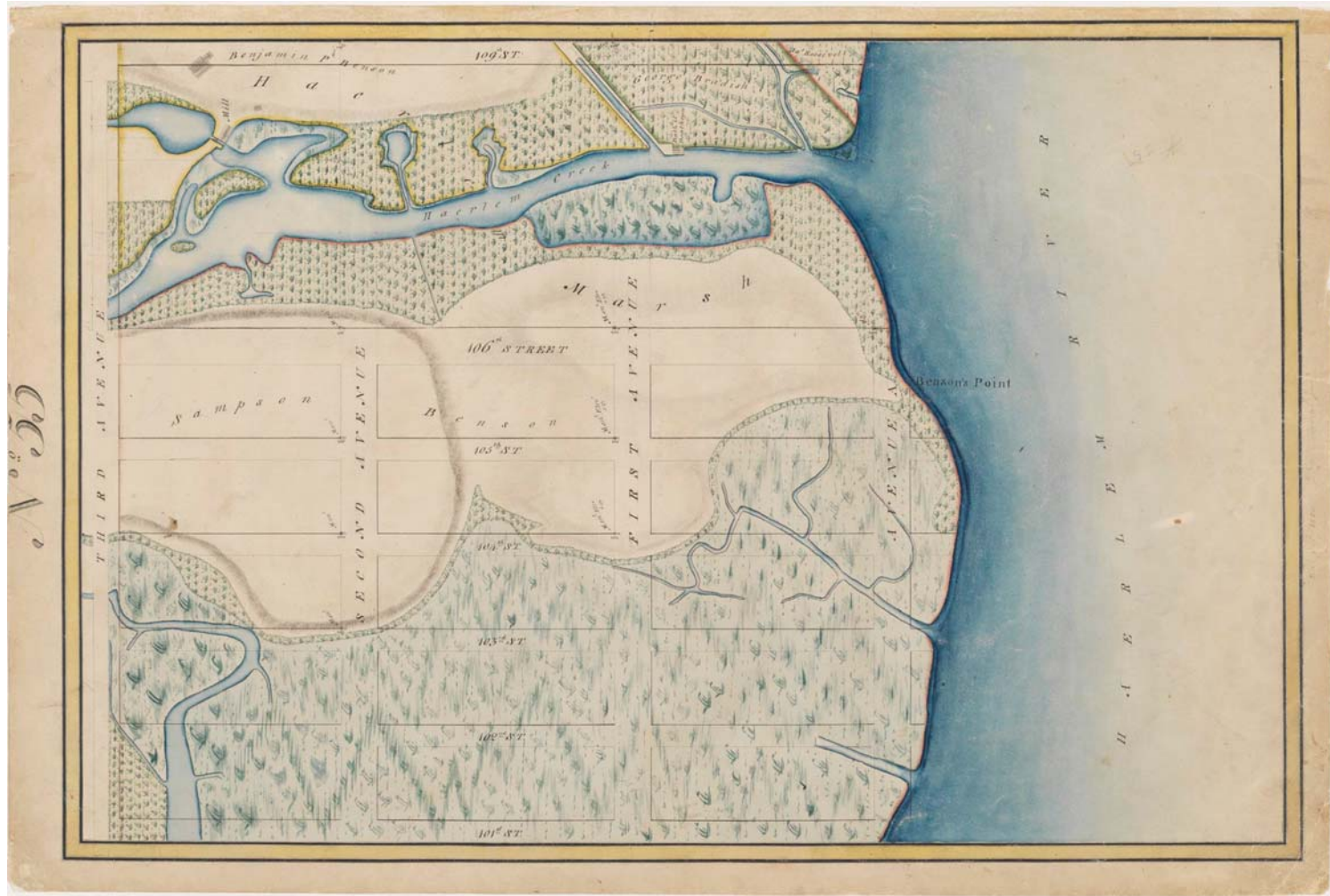
19



Commissioner's Plan of Manhattan, 1811

“The general location, character, and extent of streets...”

Advisory Committee on City Planning and Zoning of the U.S. Department of Commerce, 1928, pp. 13-14



Map source: Museum of the City of New York "Greatest Grid" exhibit

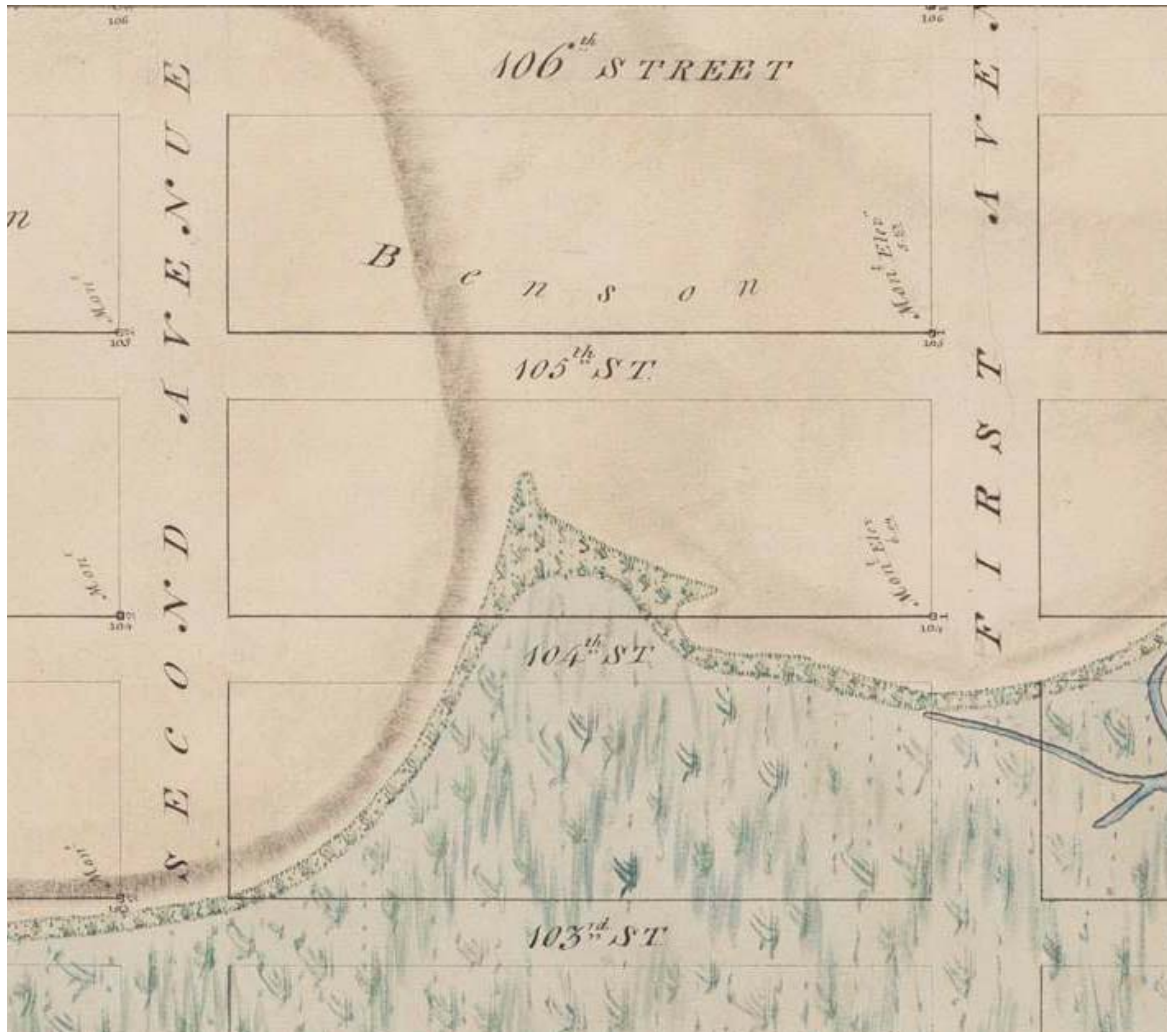
## The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013

# What is a Master Street Plan?

21

Components of a  
Master Street Plan:



Map source: Museum of the City of New York  
"Greatest Grid" exhibit

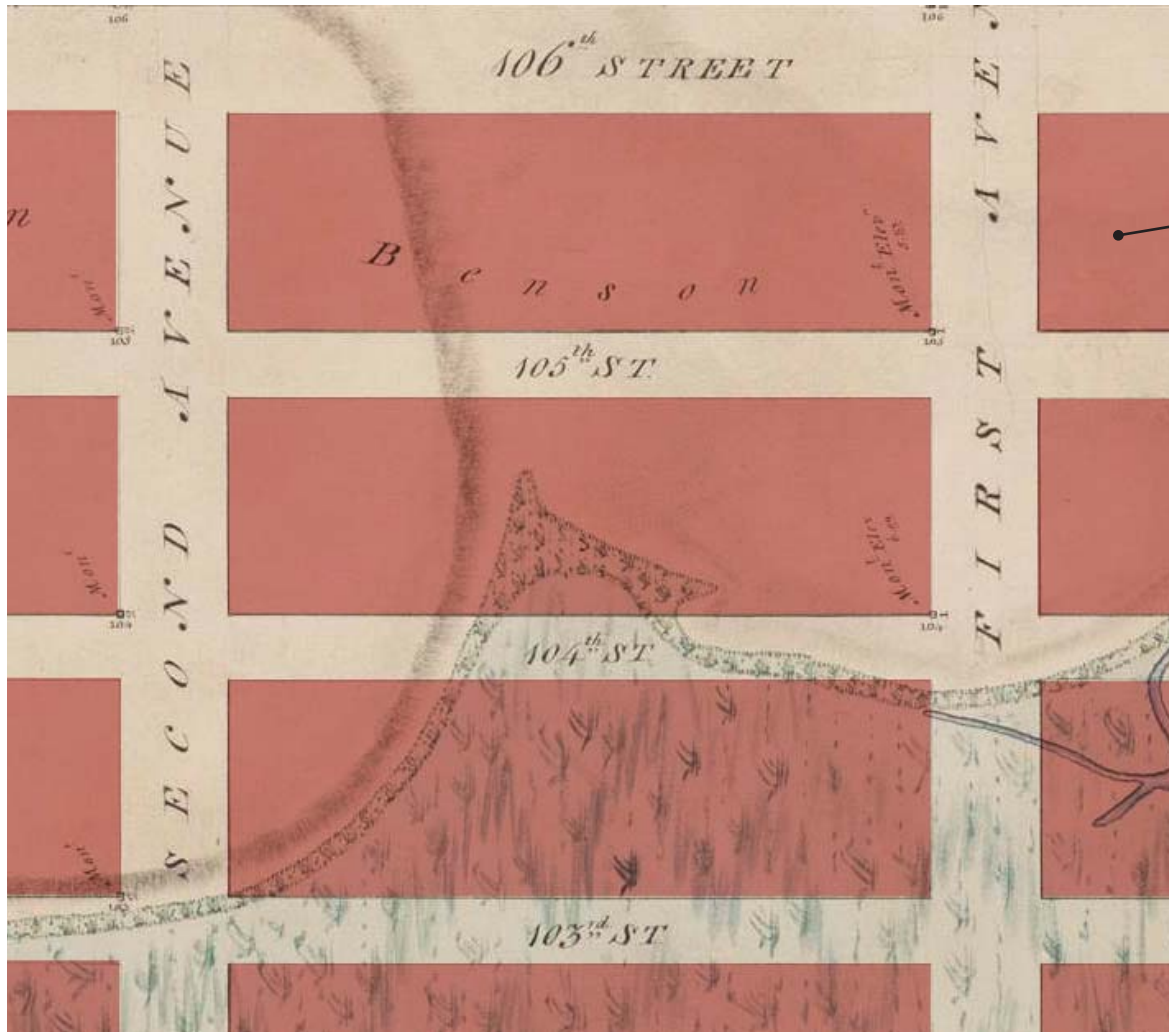
## The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013



# What is a Master Street Plan?

22



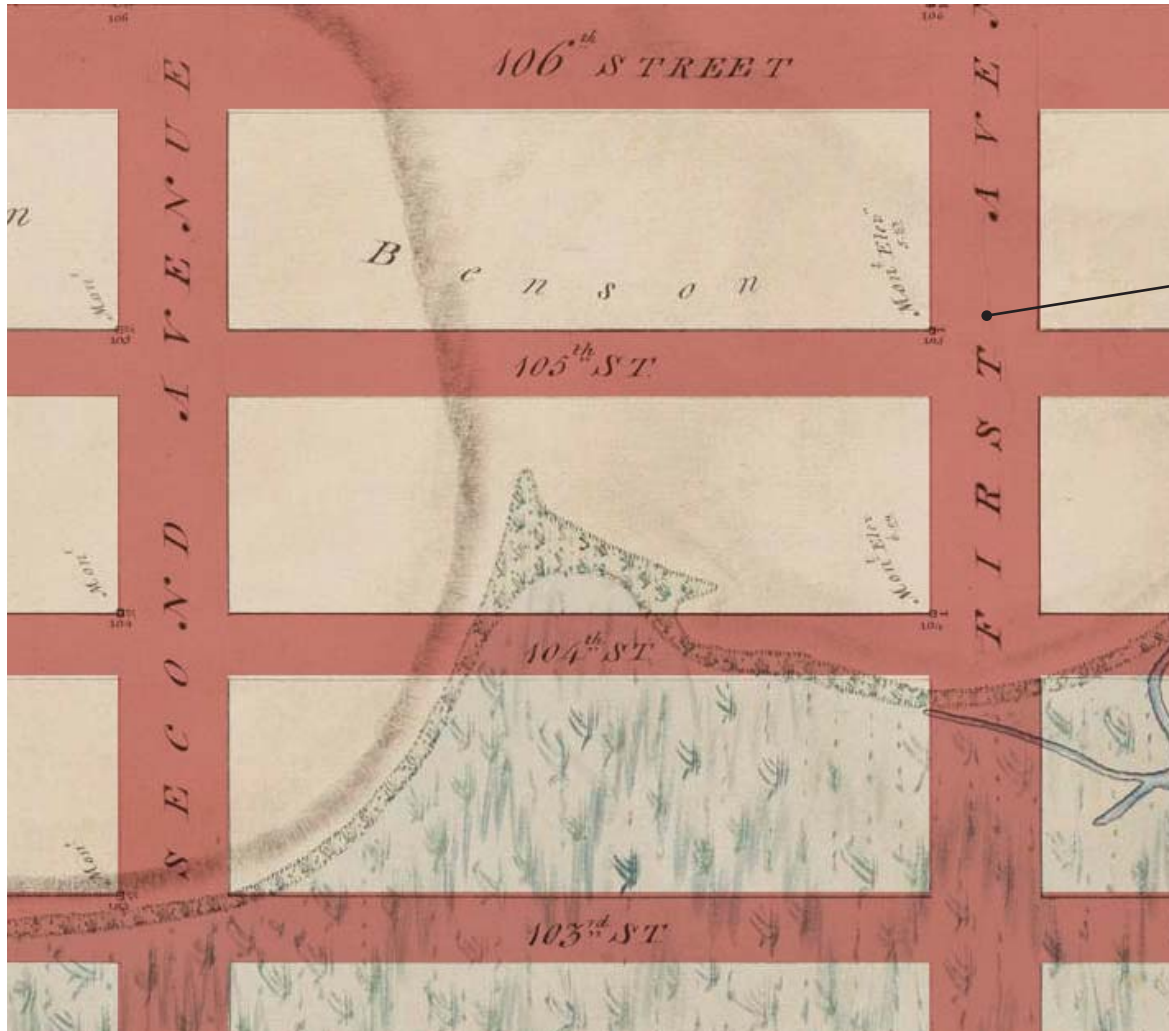
Components of a Master Street Plan:

1. Private Property

Map source: Museum of the City of New York  
"Greatest Grid" exhibit

## The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013



## Components of a Master Street Plan:

1. Private Property
2. Public Property  
(or what will become public property)

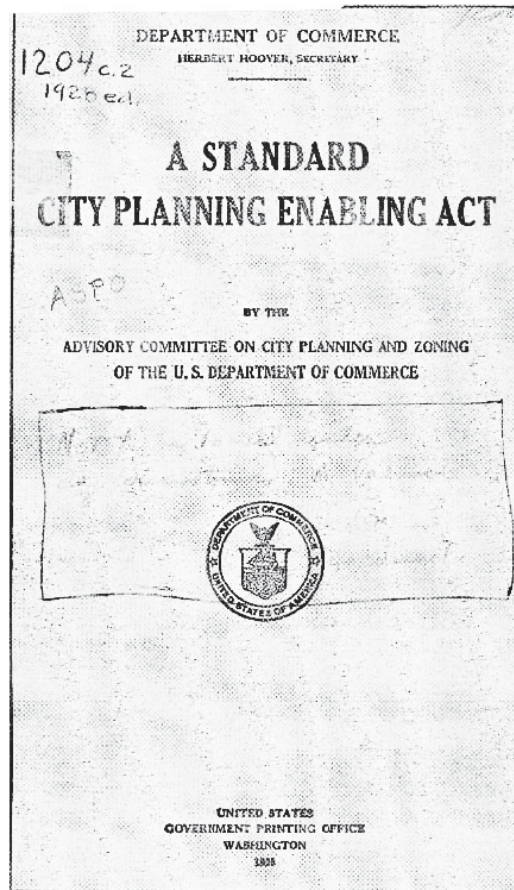
Map source: Museum of the City of New York  
"Greatest Grid" exhibit

## The Master Street Plan: A Forgotten But Critical City Planning Tool

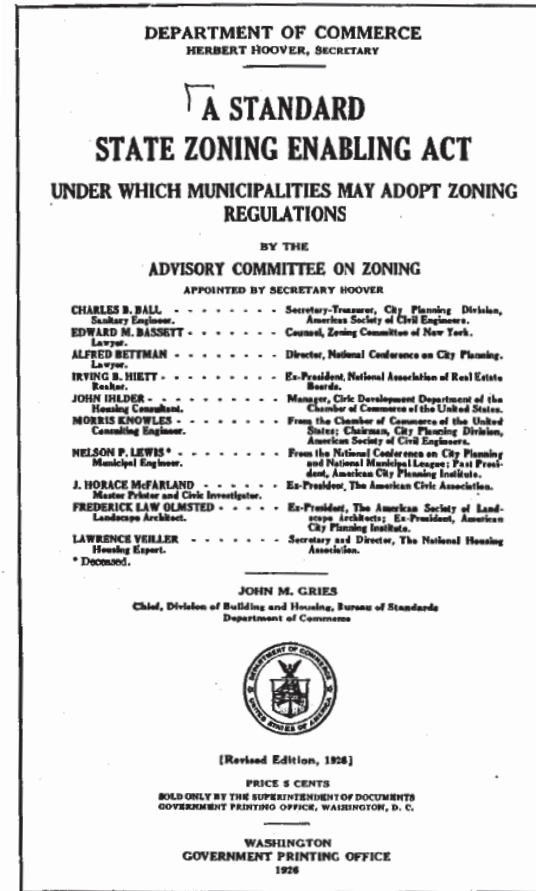
Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013



## PUBLIC



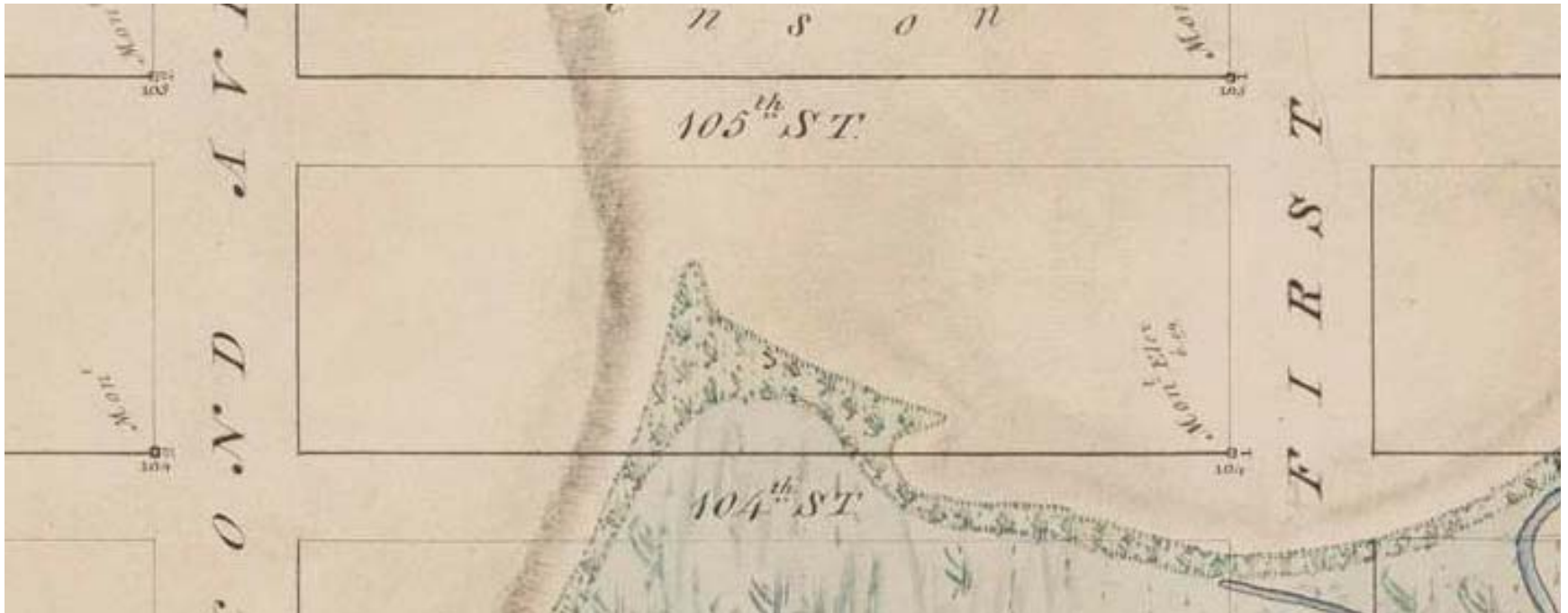
## PRIVATE



# What is a Master Street Plan?

25

## Master Street Plan = Master Right-of-Way Plan



The intention is that these rights-of-way will become streets, but no curbs or sidewalks are drawn; only the public space of the right-of-way is delineated.

A right-of-way can take on any character or function in the future. The important thing is that it is reserved for when it is needed. Remember: **streets create property frontage.**



Right-of-Way Width: **60 feet**  
Location: 105th Street, New York





Right-of-Way Width: **60 feet**  
Location: 381st Avenue, Minnesota



## 1809 Manhattan

Map Data from The New York Times  
<http://www.nytimes.com/interactive/2011/03/21/nyregion/map-of-how-manhattan-grid-grew.html>

---

### The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013





## 1812 Manhattan

Map Data from The New York Times

<http://www.nytimes.com/interactive/2011/03/21/nyregion/map-of-how-manhattan-grid-grew.html>

---

### The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013



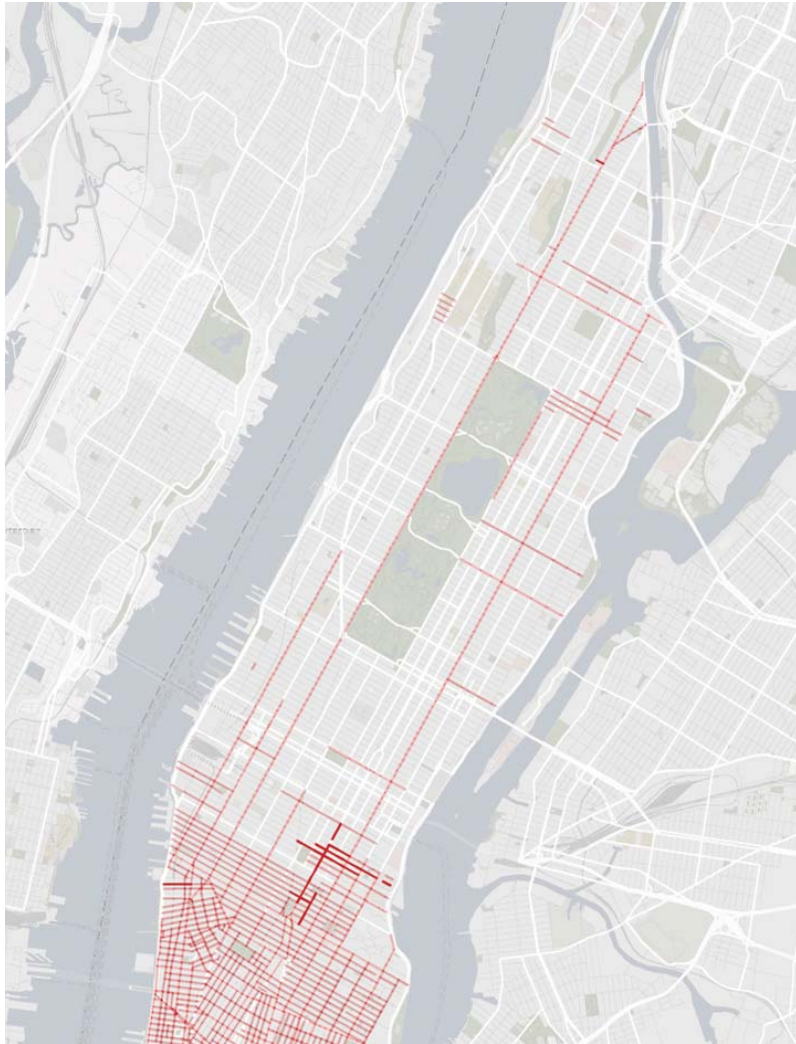
## 1814 Manhattan

Map Data from The New York Times

<http://www.nytimes.com/interactive/2011/03/21/nyregion/map-of-how-manhattan-grid-grew.html>

### The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013



## 1834 Manhattan

Map Data from The New York Times

<http://www.nytimes.com/interactive/2011/03/21/nyregion/map-of-how-manhattan-grid-grew.html>

### The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013



## 1837 Manhattan

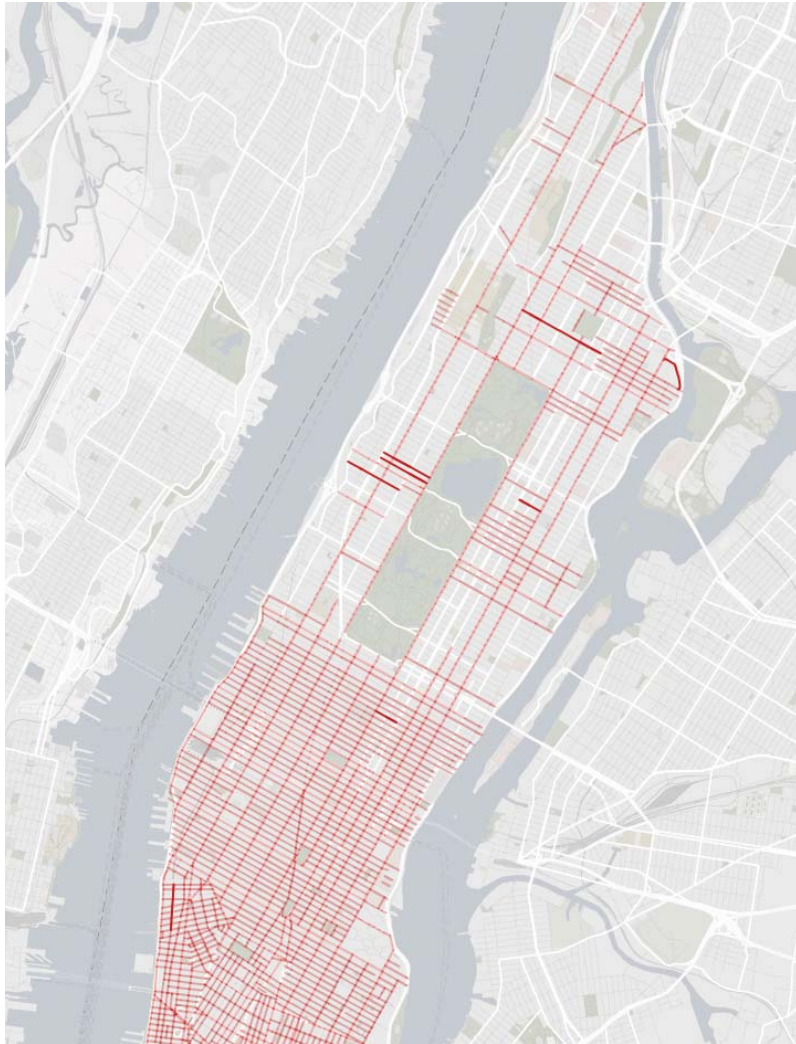
Map Data from The New York Times

<http://www.nytimes.com/interactive/2011/03/21/nyregion/map-of-how-manhattan-grid-grew.html>

### The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013





## 1852 Manhattan

Map Data from The New York Times

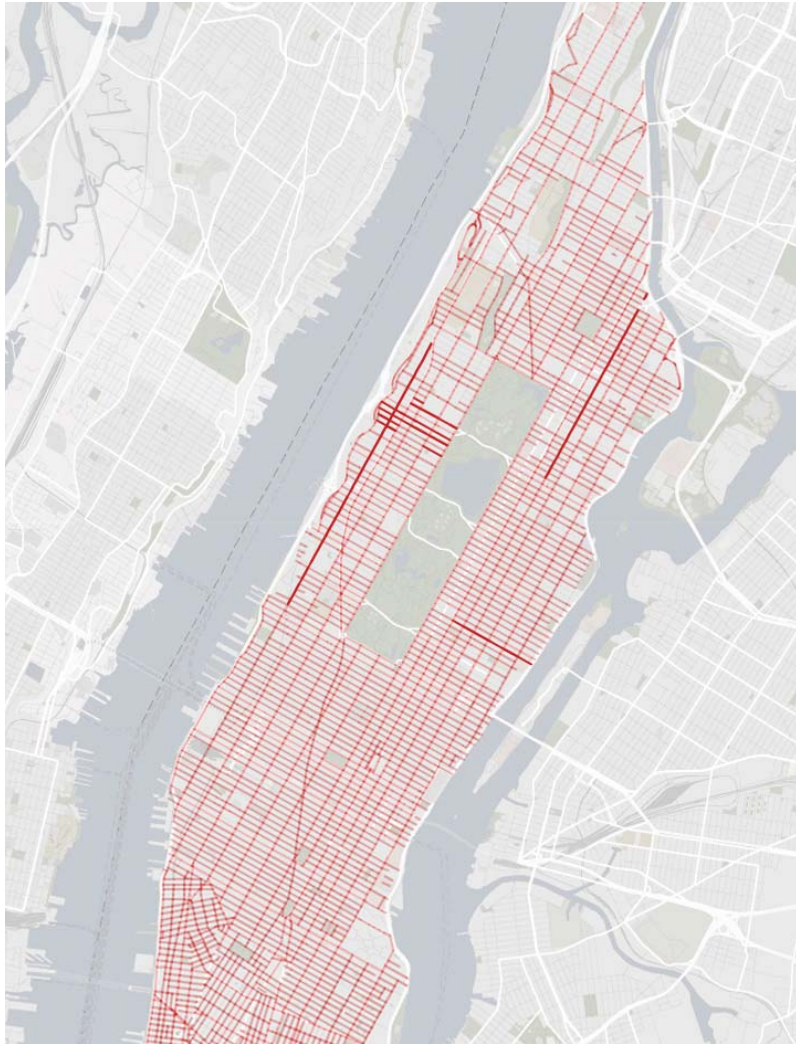
<http://www.nytimes.com/interactive/2011/03/21/nyregion/map-of-how-manhattan-grid-grew.html>

---

### The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013





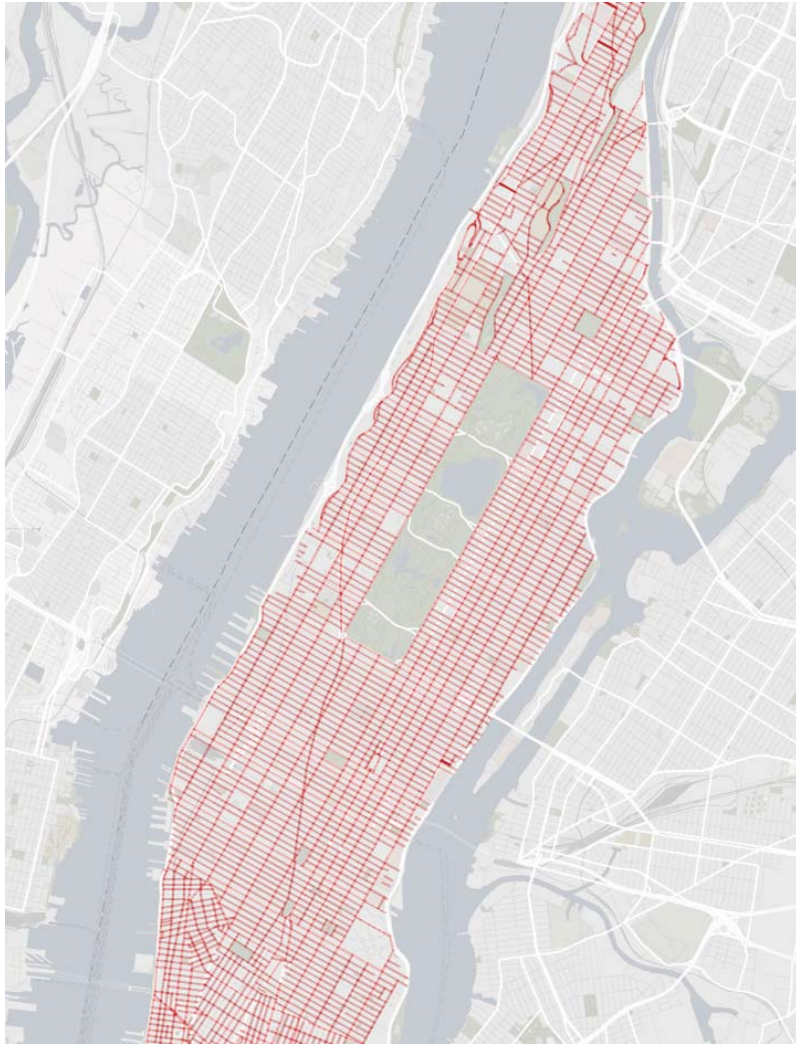
## 1874 Manhattan

Map Data from The New York Times

<http://www.nytimes.com/interactive/2011/03/21/nyregion/map-of-how-manhattan-grid-grew.html>

### The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013



## 1899 Manhattan

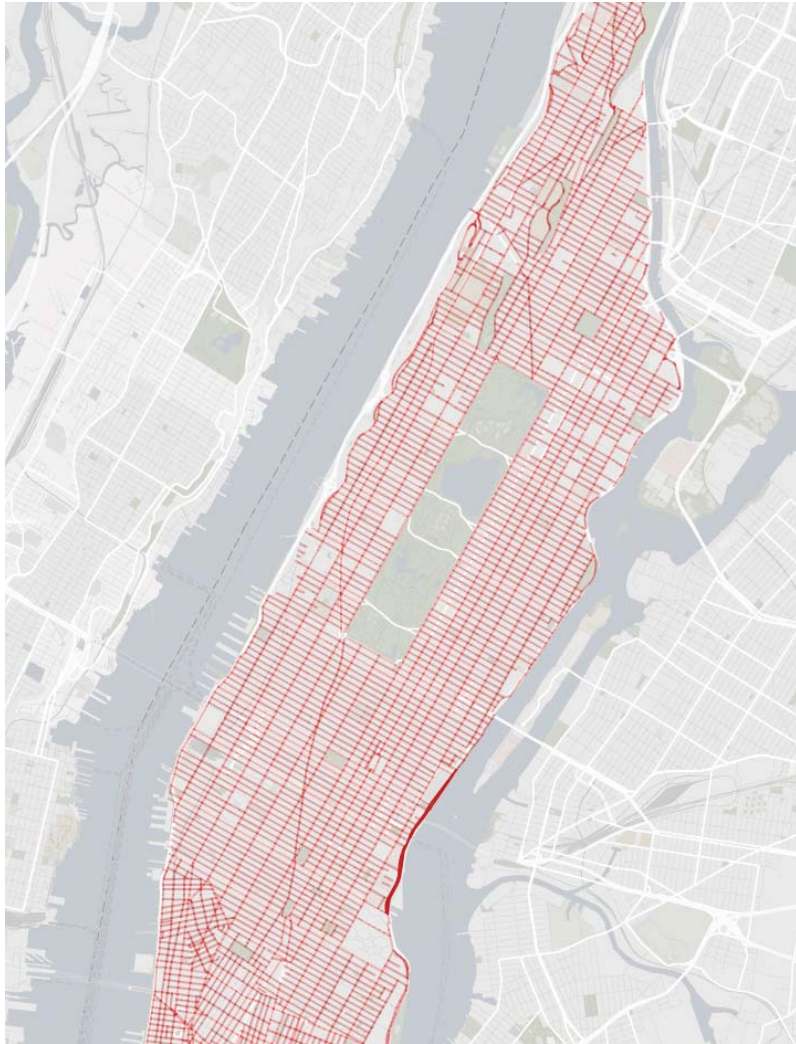
Map Data from The New York Times

<http://www.nytimes.com/interactive/2011/03/21/nyregion/map-of-how-manhattan-grid-grew.html>

---

### The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013



## 1942 Manhattan

Map Data from The New York Times

<http://www.nytimes.com/interactive/2011/03/21/nyregion/map-of-how-manhattan-grid-grew.html>

---

### The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013



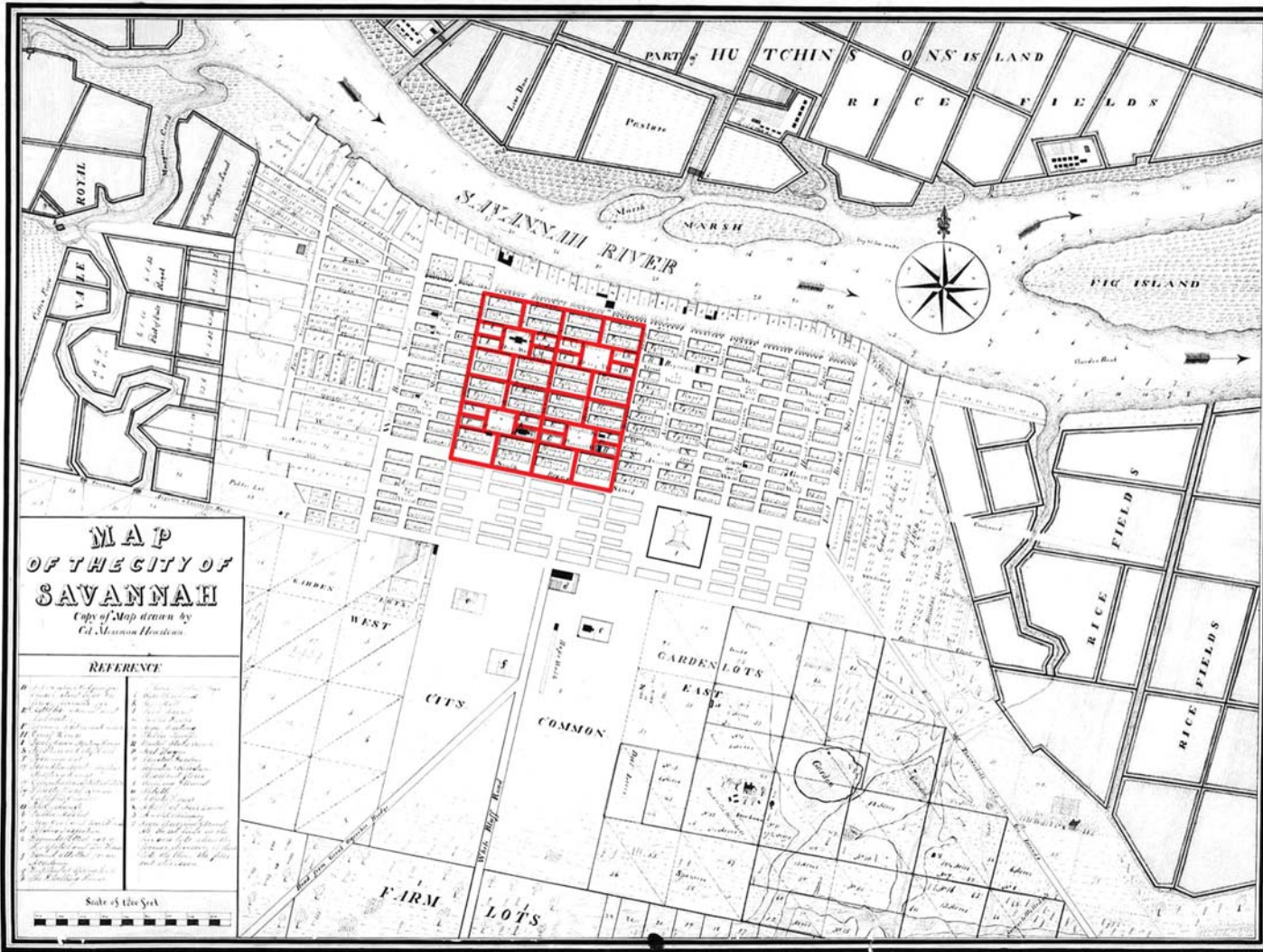


*Imagine if Manhattan developed from a zoning map rather than a master street plan...*

## **The Master Street Plan: A Forgotten But Critical City Planning Tool**

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013

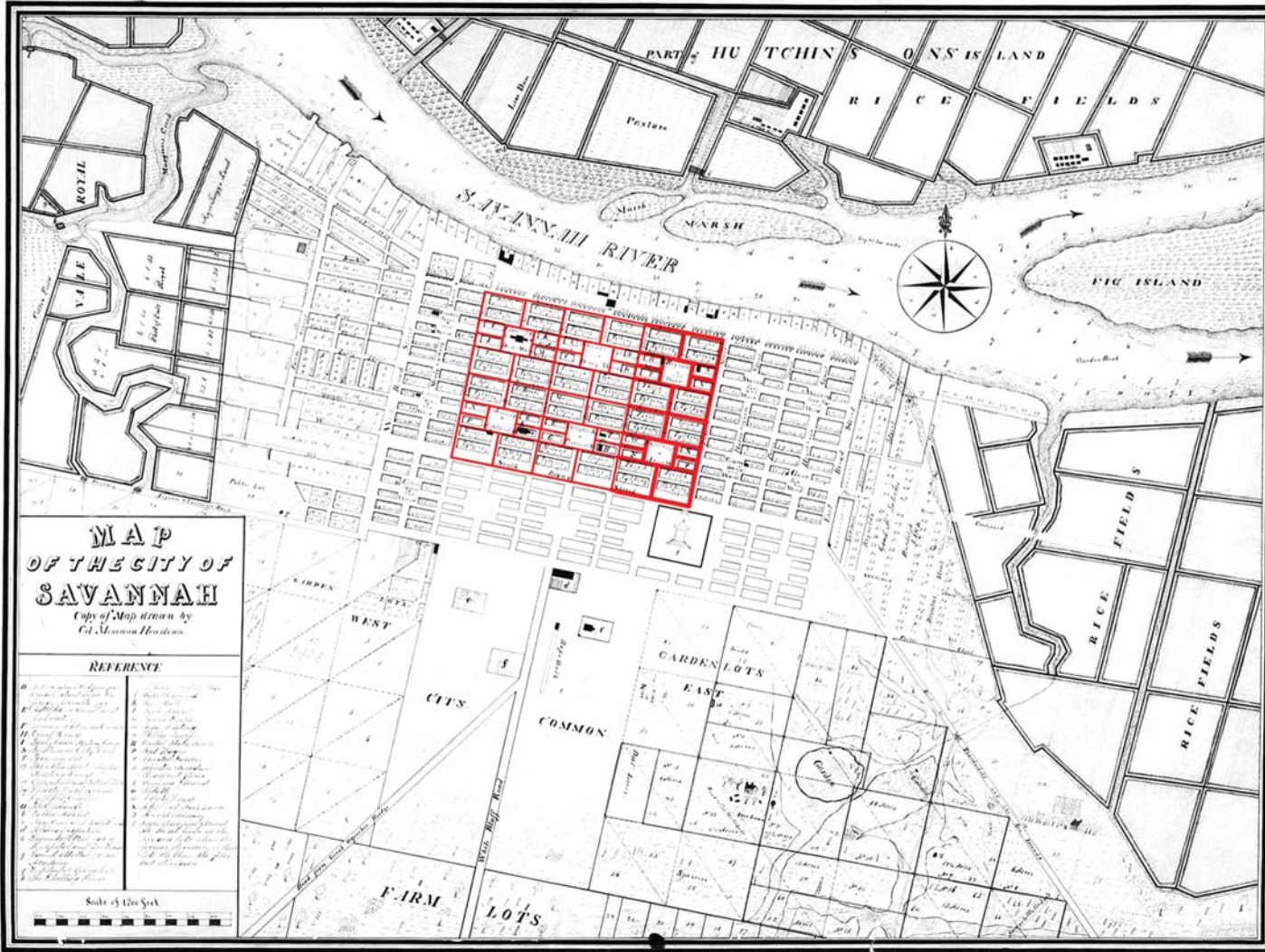




**1734**  
Savannah

## The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013

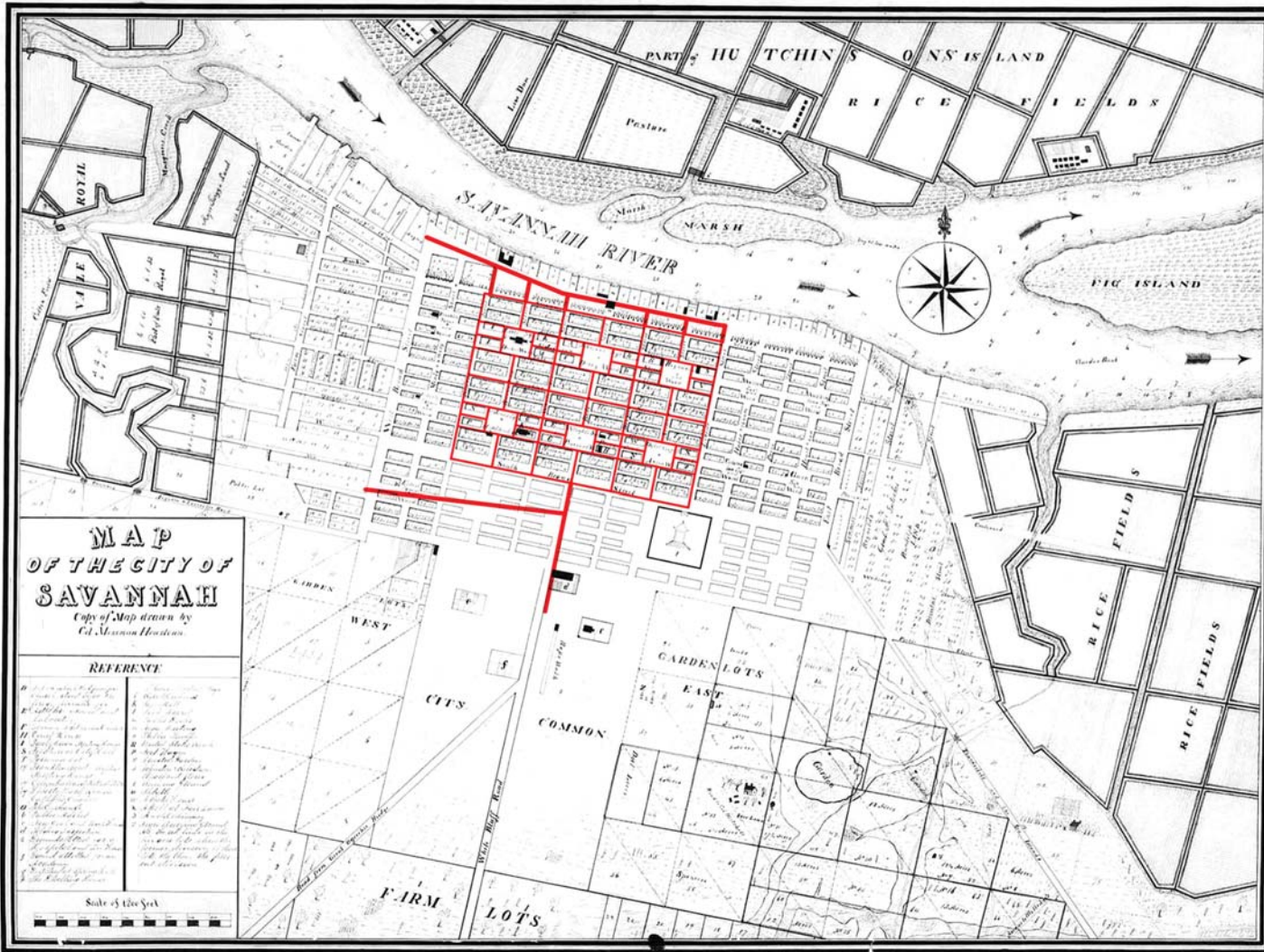


**1735**  
Savannah

## The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013

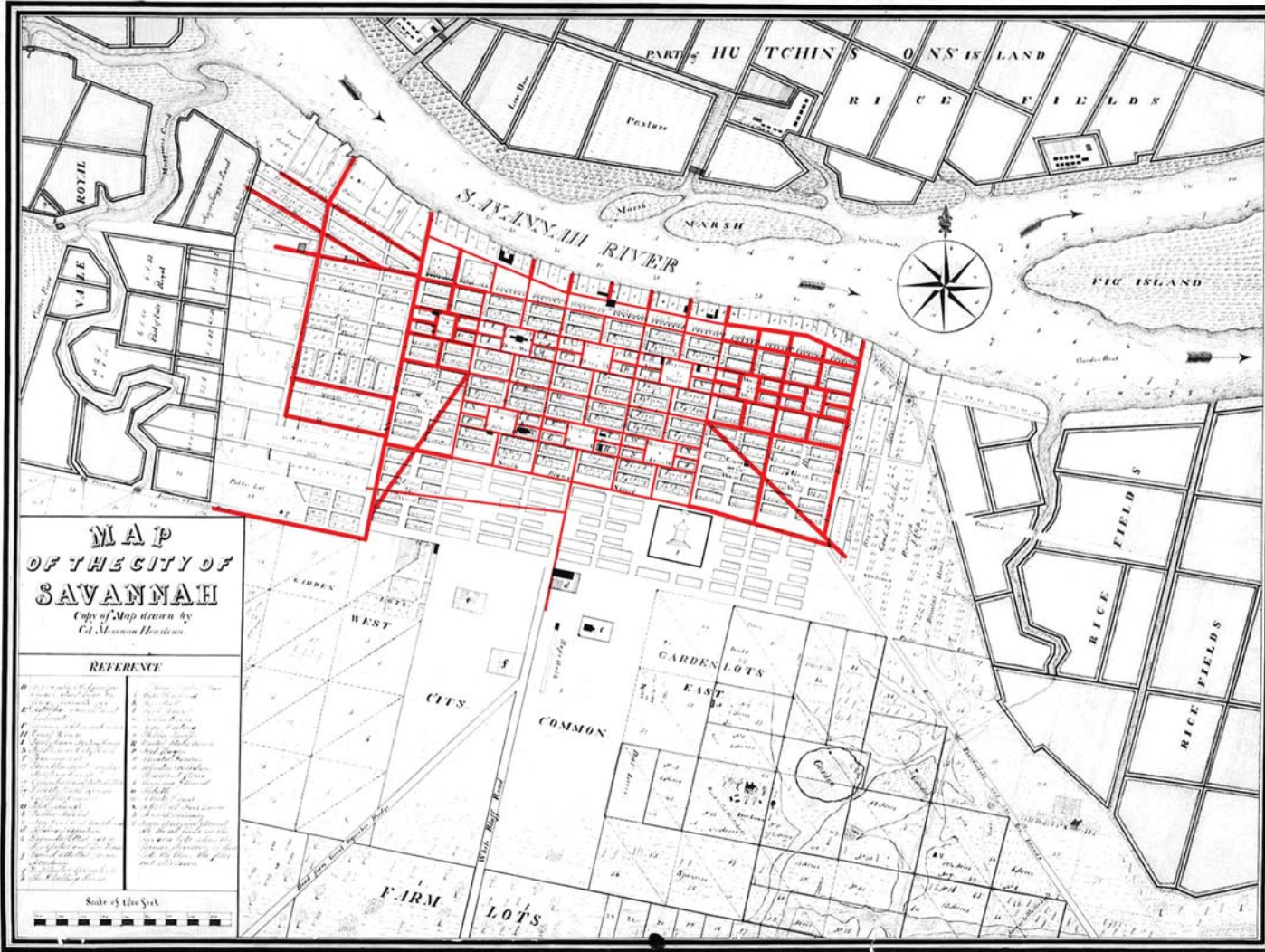




**1790**  
Savannah

## The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013

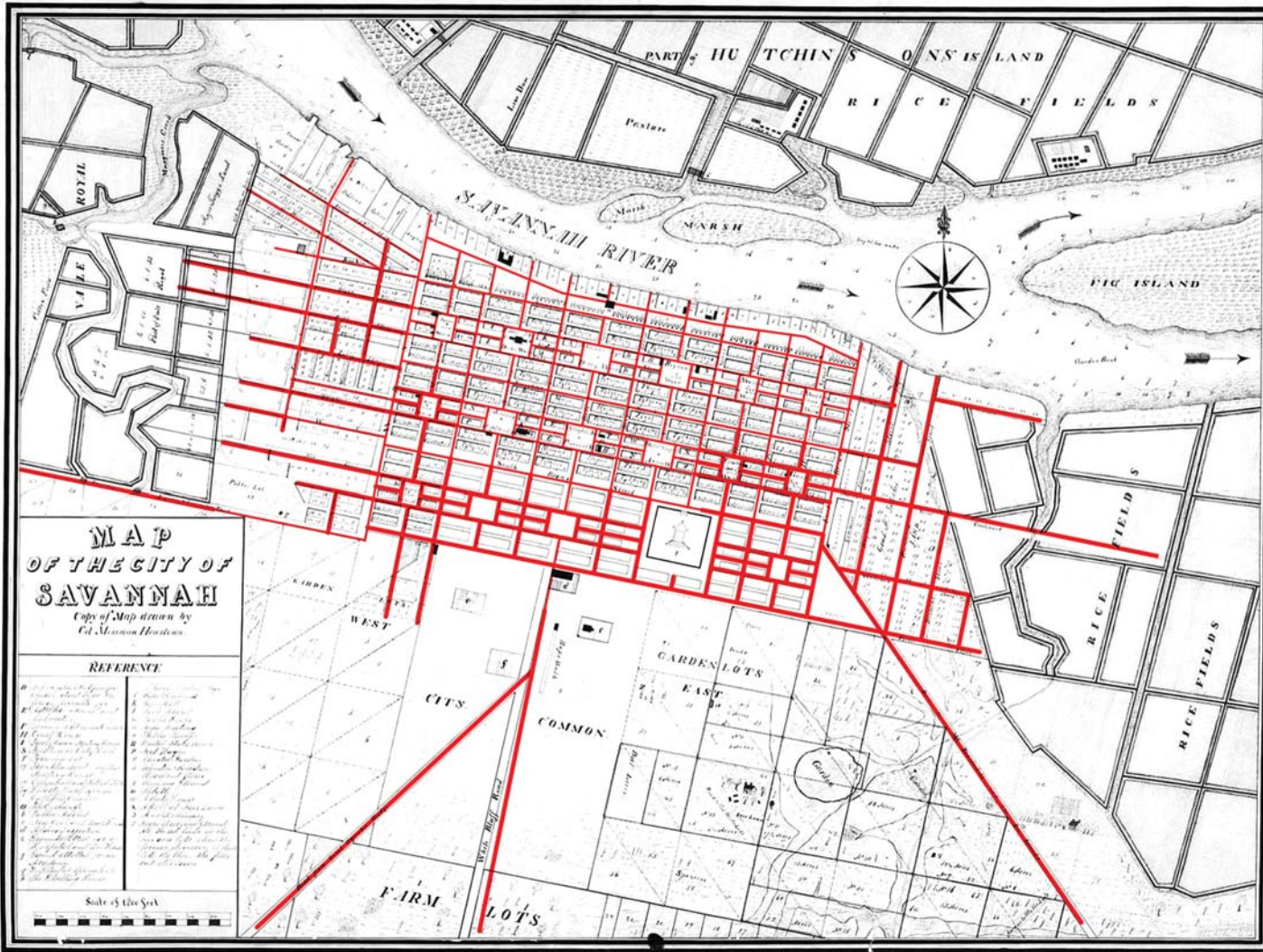


**1796**  
Savannah

## The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013



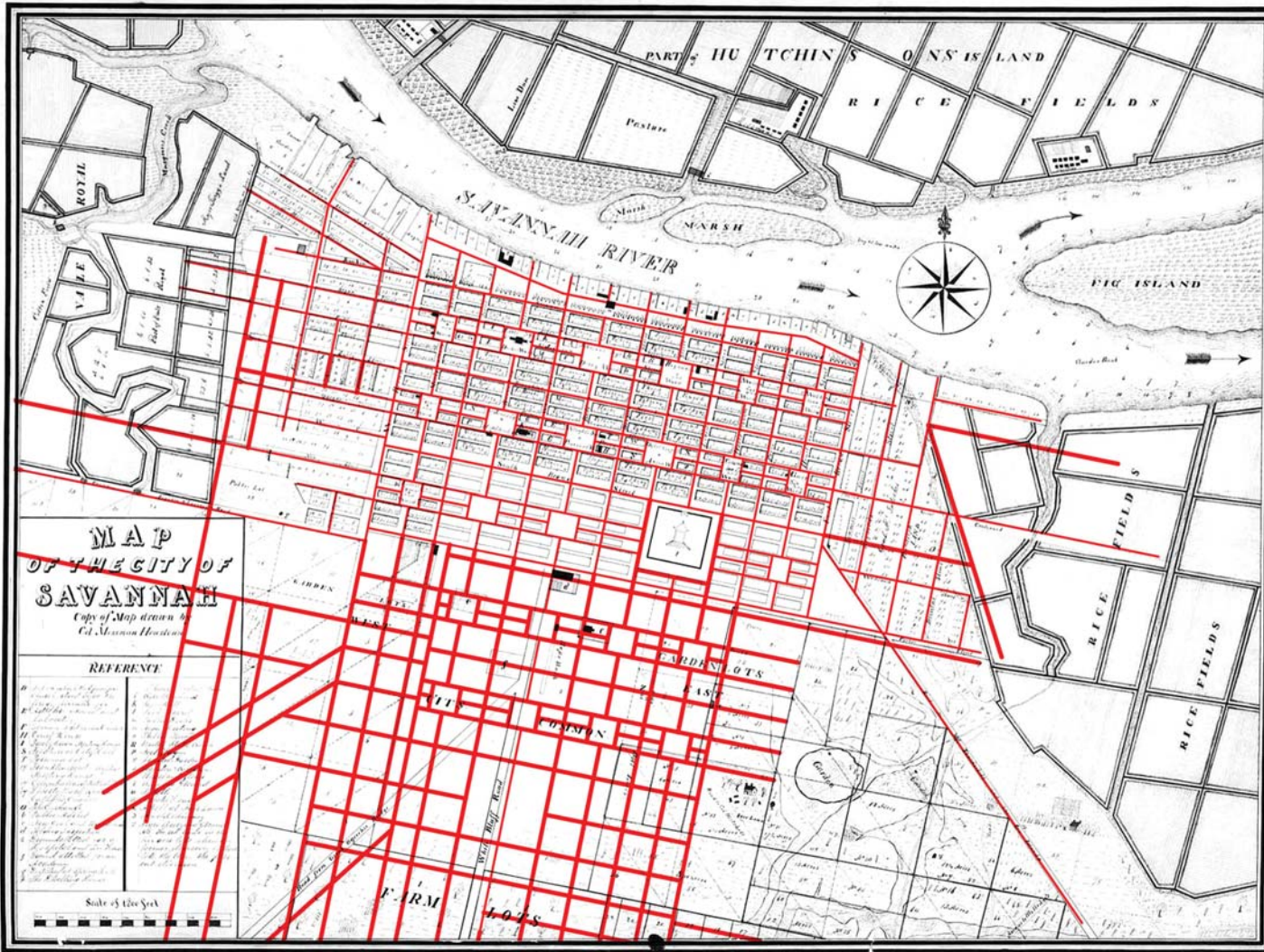


**1812**  
Savannah

## The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013

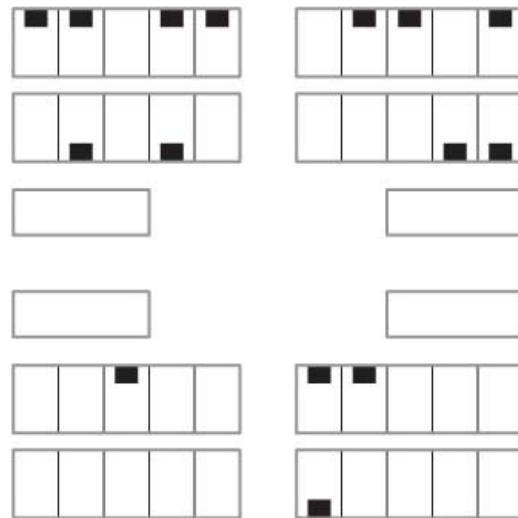




**1855**  
Savannah

## The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013

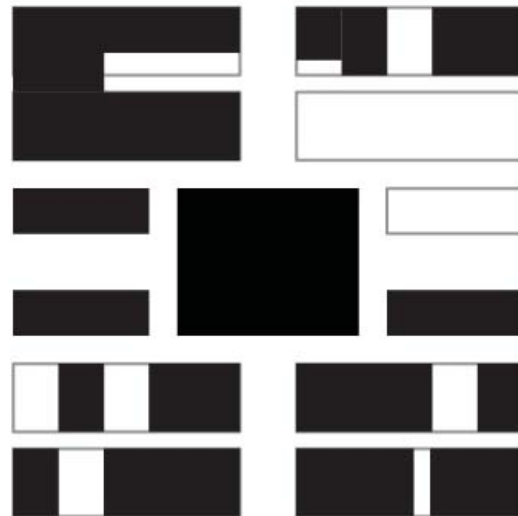


**1734**  
Decker Ward  
Savannah, Georgia

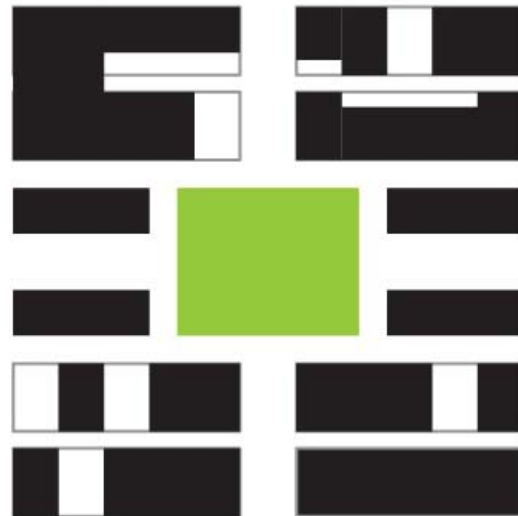


**1884**  
Decker Ward  
Savannah, Georgia

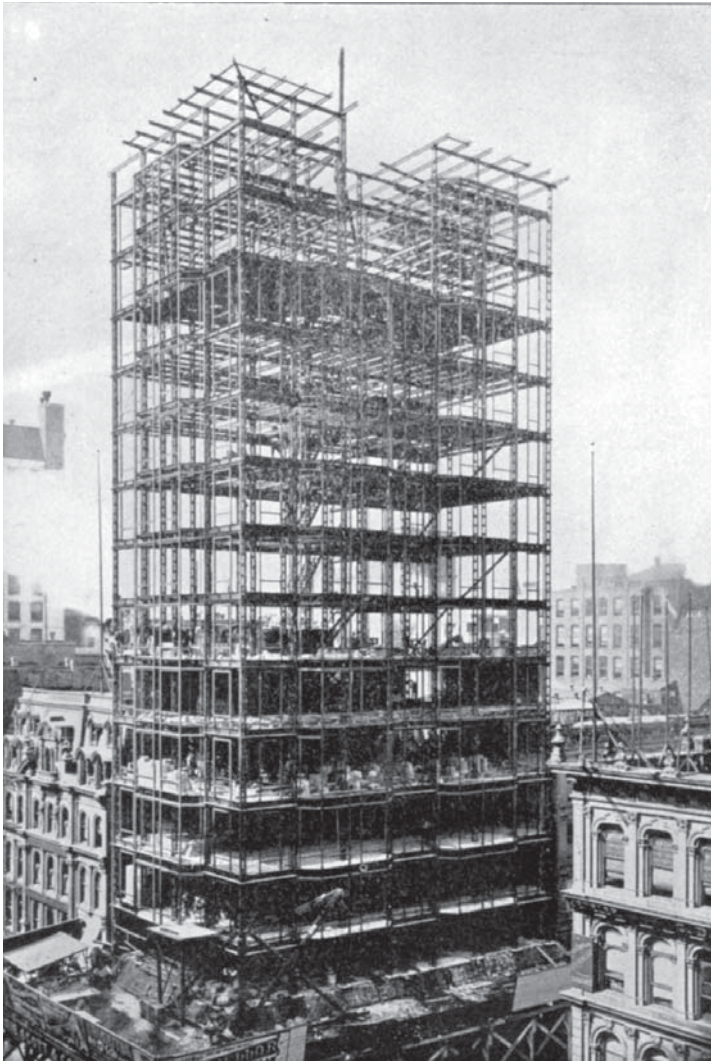




**1994**  
Decker Ward  
Savannah, Georgia



**2013**  
Decker Ward  
Savannah, Georgia



## ANALOGY

When an architect designs a commercial skyscraper they do not tailor individual floors to projected individual tenants; they do not design the 5th floor any differently than they do the 17th floor. Instead, the developer wants the building to be as accommodating as possible to as many different tenants as possible both now and in the future. Therefore, each floor is designed with maximum flexibility in mind. This allows a dentist's office, a museum, and a university to all fit within the same skyscraper if need be on any floor and at any time.

In this same way, the blocks in Manhattan, while all essentially the same in their physical characteristics, have accommodated an amazing array of land uses over time. Both Manhattan and the commercial skyscraper stand as testaments to the benefits of a predetermined and unyielding structure. The rigid framework of steel in the commercial skyscraper mirrors the rigid framework of rights-of-way in the city.

---

### The Master Street Plan: A Forgotten But Critical City Planning Tool

Paul L. Knight, AICP, CNU-A • PKnight@HistoricalConcepts.com • GPA Fall Conference • October 10, 2013

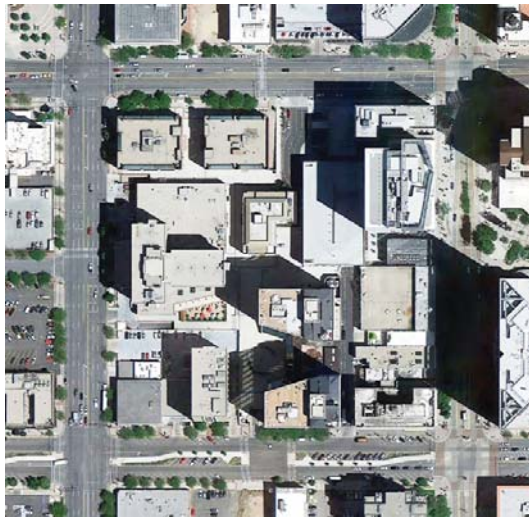
- Cities are composed of PUBLIC and PRIVATE elements.
- A truly comprehensive plan requires 2 physical maps: Master Street Plan (Public) and Zoning Plan (Private)
- A master street plan is a municipally established map to guide the future, physical framework of the city.
- A master street plan is executed incrementally over time.



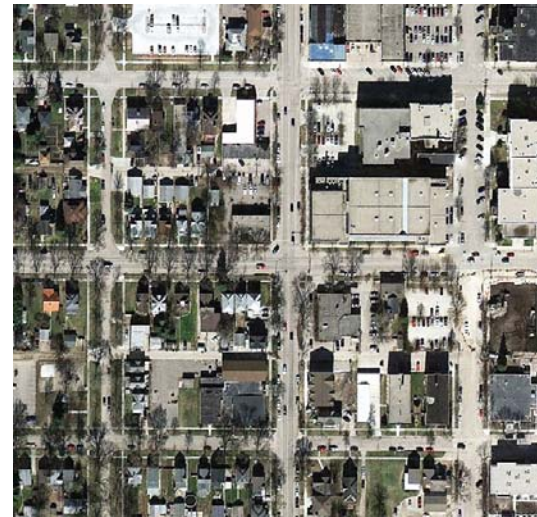
- 1) What can a master street plan do for the *physical* city?
- 2) What does a master street plan do for the *process* of development?

## Block Size

*The fundamental unit of urbanism.*



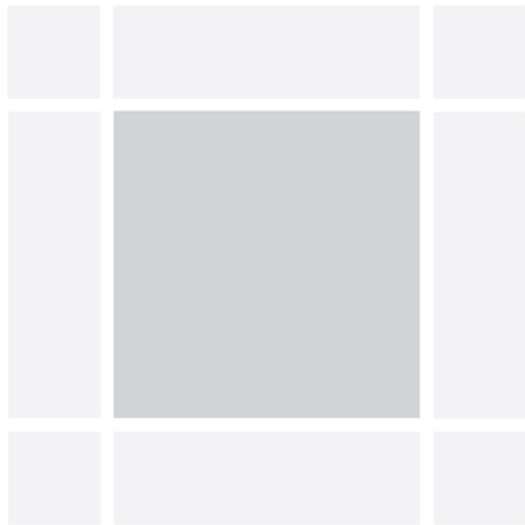
**Salt Lake City, UT**  
660' x 660'



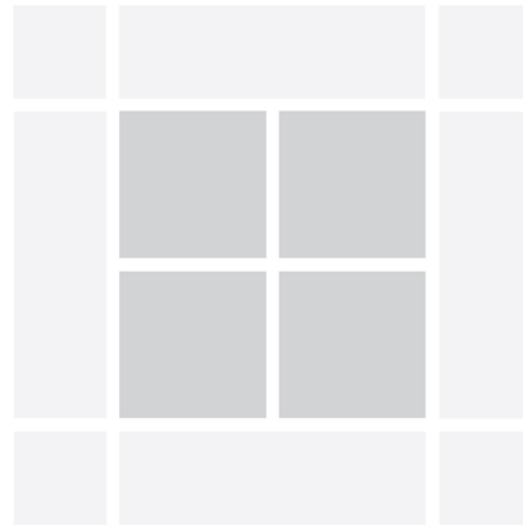
**Grand Forks, ND**  
300' x 300'

## Block Size

*The fundamental unit of urbanism.*



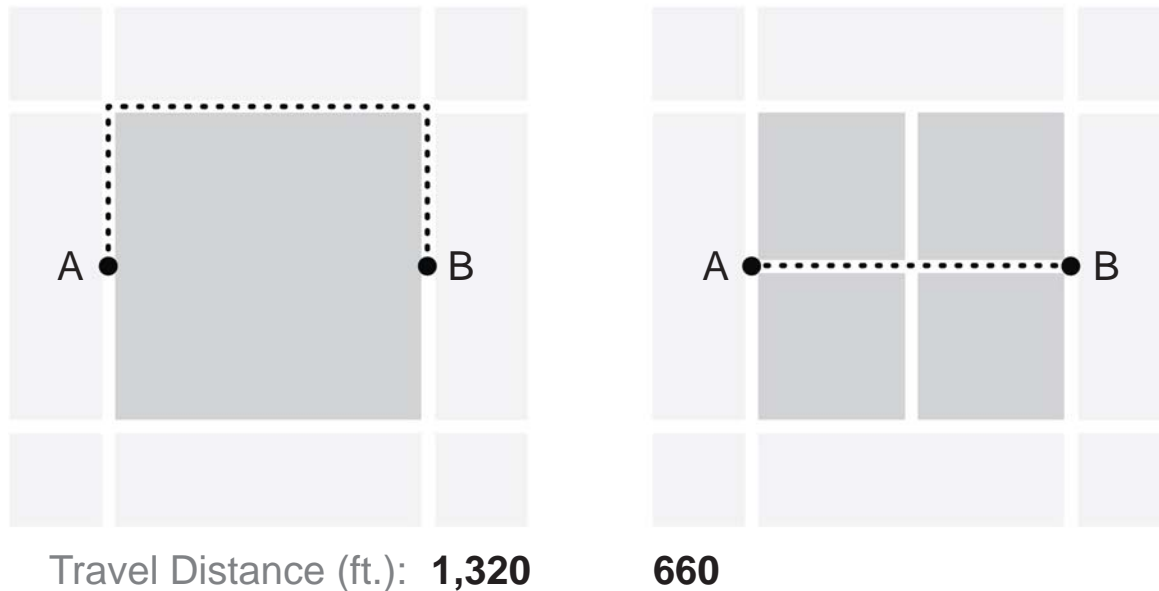
**Salt Lake City, UT**  
660' x 660'



**Grand Forks, ND**  
300' x 300'

## Benefit #1: Connectivity, Walkability

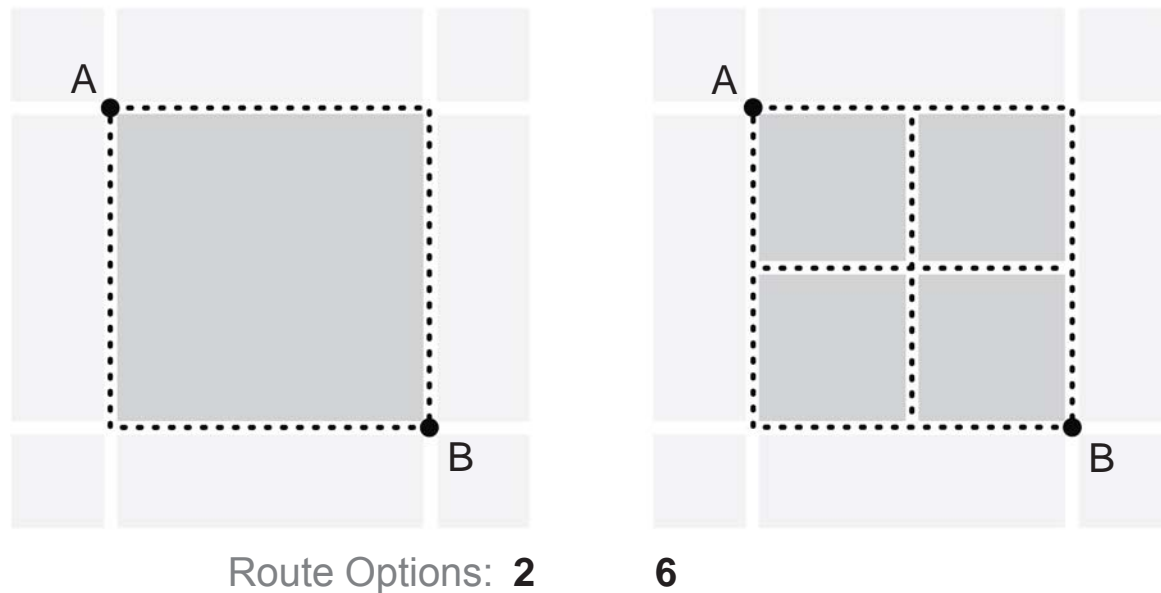
*Get from point A to point B more efficiently.*





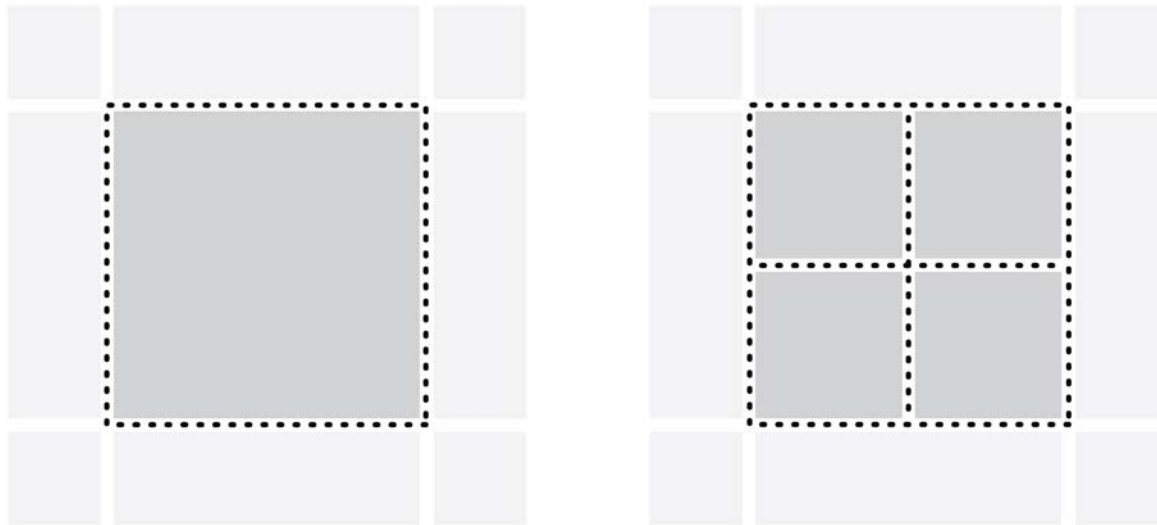
## Benefit #1: Connectivity, Walkability

*More route options between point A and point B.*



## Benefit #1: Connectivity, Walkability

*Distribute traffic across a greater network.*

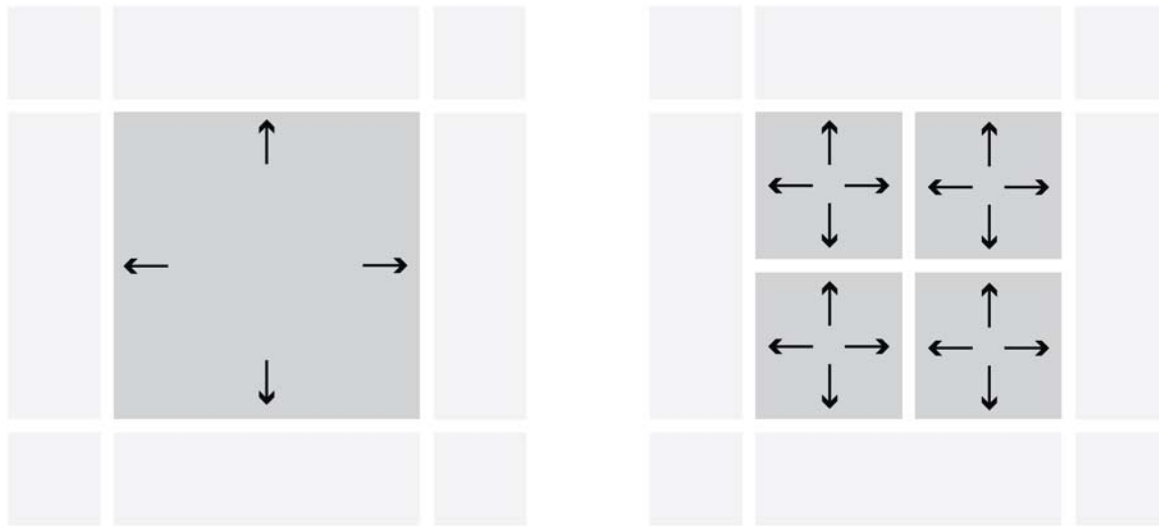


Available Network (ft.): **2,640**

**4,800**

## Benefit #2: Creation of Street Frontage

*Greater access to private property.*



Street Frontage (ft.): **2,640**

Corner Lots: **4**

**4,800**

**16**



## **Benefit #3: Adaptable Blocks, Reusable Infrastructure**

*Throughout history and around the world, land uses have operated within a relatively tight range of dimensions.*

## Benefit #3: Adaptable Blocks, Reusable Infrastructure

*Throughout history and around the world, land uses operate within a relatively tight range of dimensions.*



## Benefit #3: Adaptable Blocks, Reusable Infrastructure



Chicago



## Benefit #3: Adaptable Blocks, Reusable Infrastructure



**Buenos Aires**

## Benefit #3: Adaptable Blocks, Reusable Infrastructure



Amsterdam

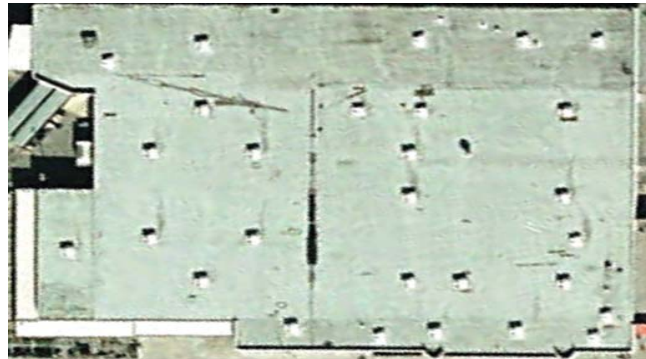
## Benefit #3: Adaptable Blocks, Reusable Infrastructure



### Walmart

90,000 sf + some parking

## Benefit #3: Adaptable Blocks, Reusable Infrastructure



**Walmart**

145,000 sf



## Benefit #4: Maintain Health, Safety, & General Welfare

*“A civilized community needs streets for sewers, water supply, gas and electricity. This relates to the public health and comfort. It needs streets for water for fire protection and the movement of fire apparatus. This relates to public safety. It needs streets for foot and wheel traffic. This relates to all police power fundamentals.”*

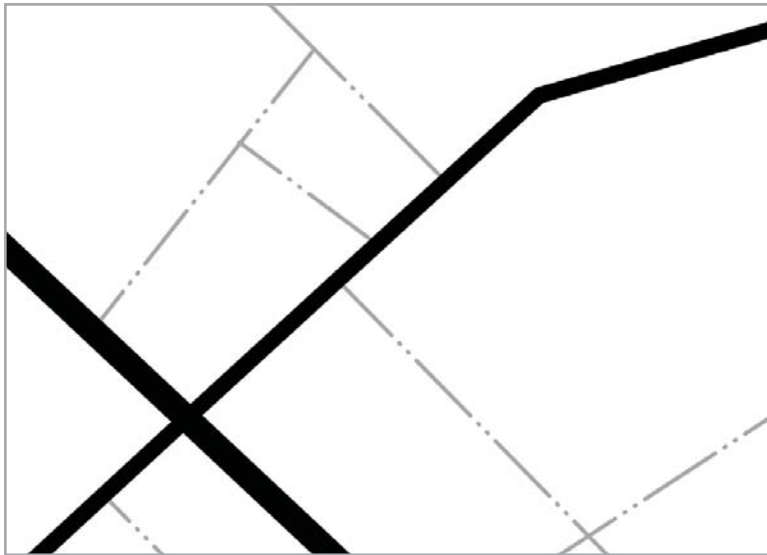
Edward Basset, *Regional Plan of New York and Its Environs*, 1929

- 1) What can a master street plan do for the *physical* city?
- 2) What does a master street plan do for the *process* of development?

## **Zoning-Dominated Model**

## **Master Street Plan Model**

## Zoning-Dominated Model

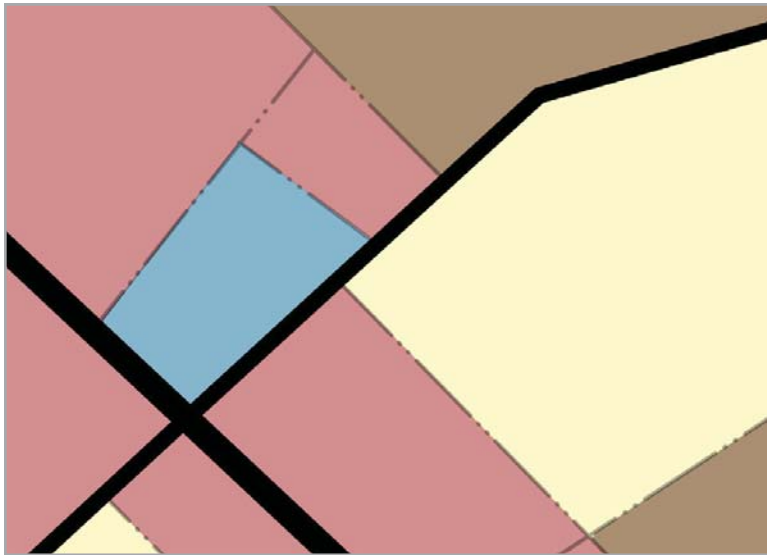


## Master Street Plan Model



## Zoning-Dominated Model

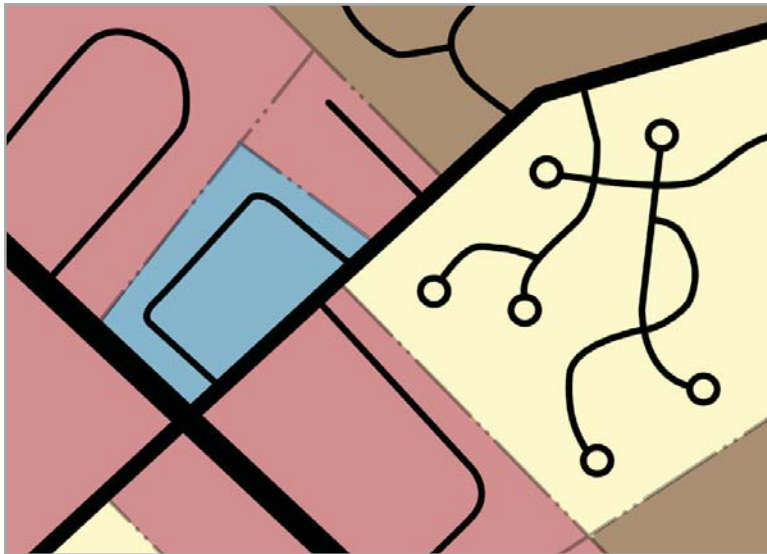
## Master Street Plan Model



### Step 1: Zone

## Zoning-Dominated Model

## Master Street Plan Model

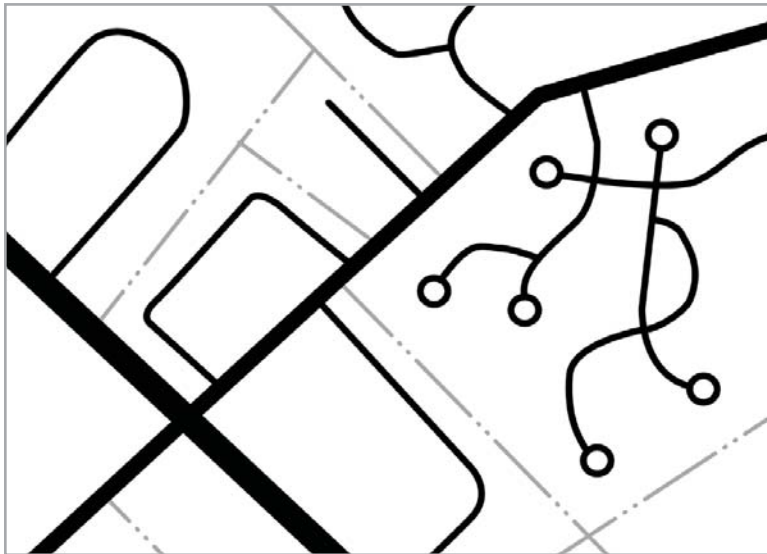


**Step 1: Zone**

**Step 2: Subdivide**

## Zoning-Dominated Model

## Master Street Plan Model

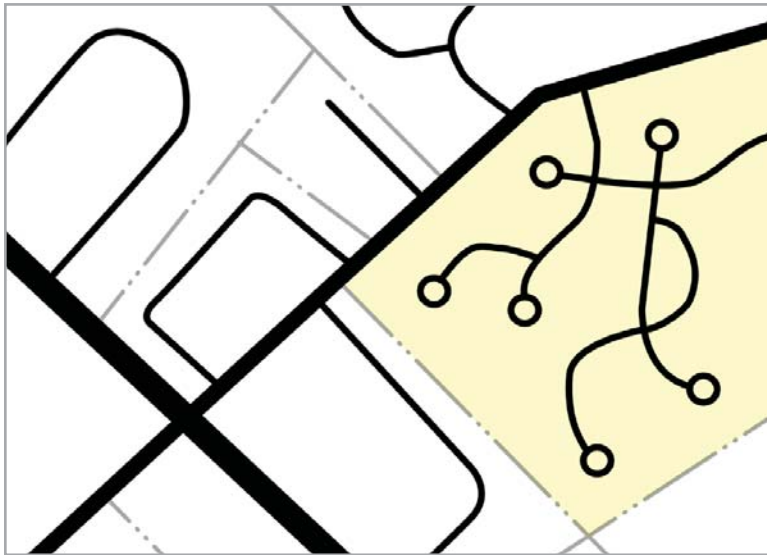


**Step 1: Zone**

**Step 2: Subdivide**

## Zoning-Dominated Model

## Master Street Plan Model



**Step 1: Zone**

**Step 2: Subdivide**



## Zoning-Dominated Model

## Master Street Plan Model

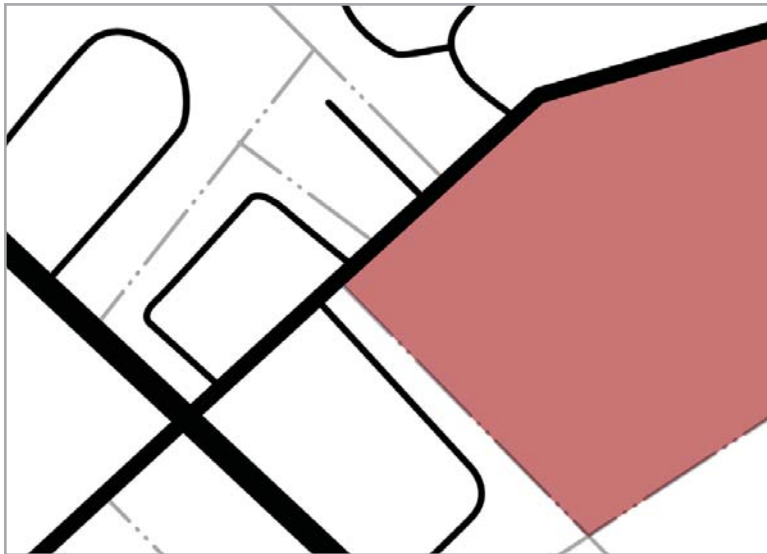


**Step 1: Zone**

**Step 2: Subdivide**

## Zoning-Dominated Model

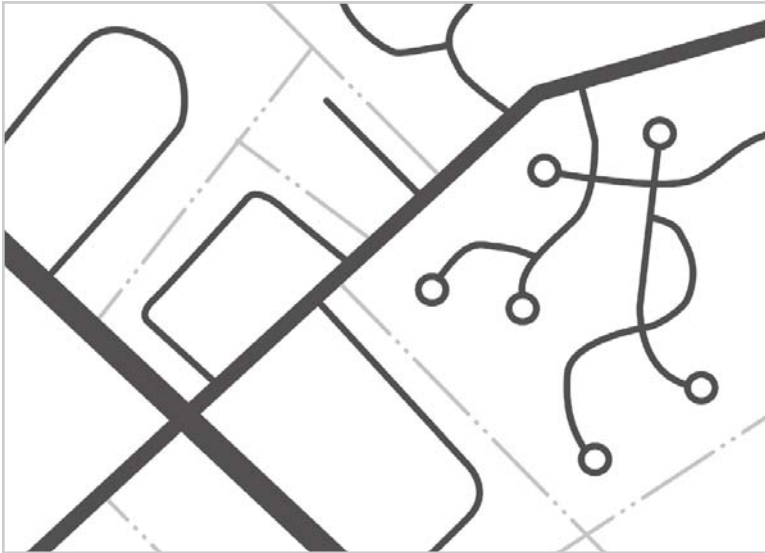
## Master Street Plan Model



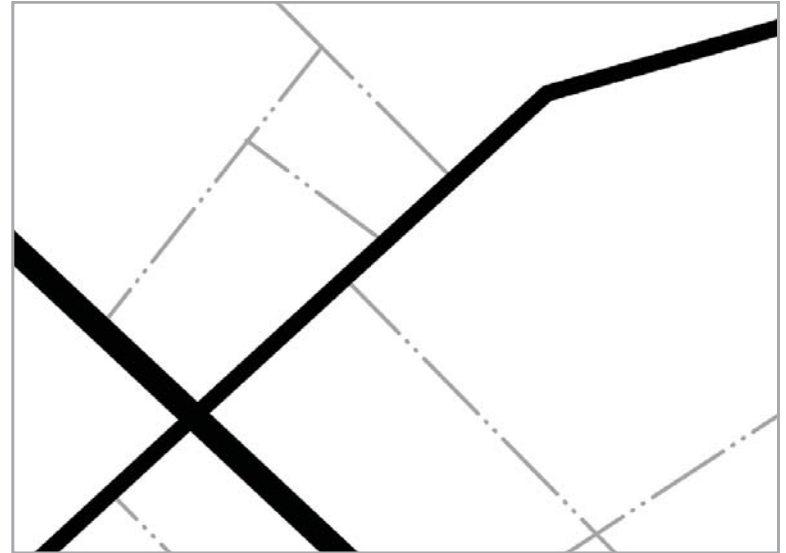
**Step 1: Zone**

**Step 2: Subdivide**

## Zoning-Dominated Model



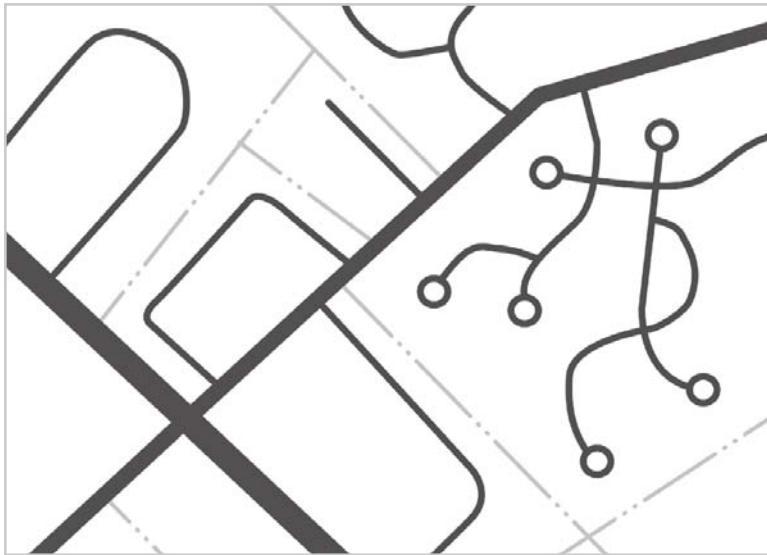
## Master Street Plan Model



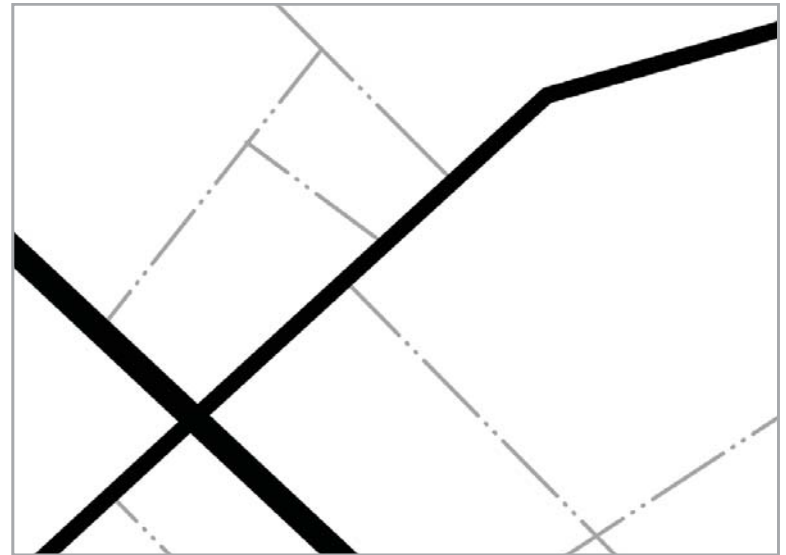
**Step 1: Zone**

**Step 2: Subdivide**

## Zoning-Dominated Model

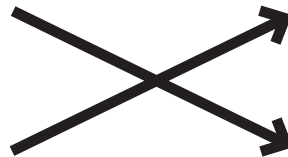


## Master Street Plan Model

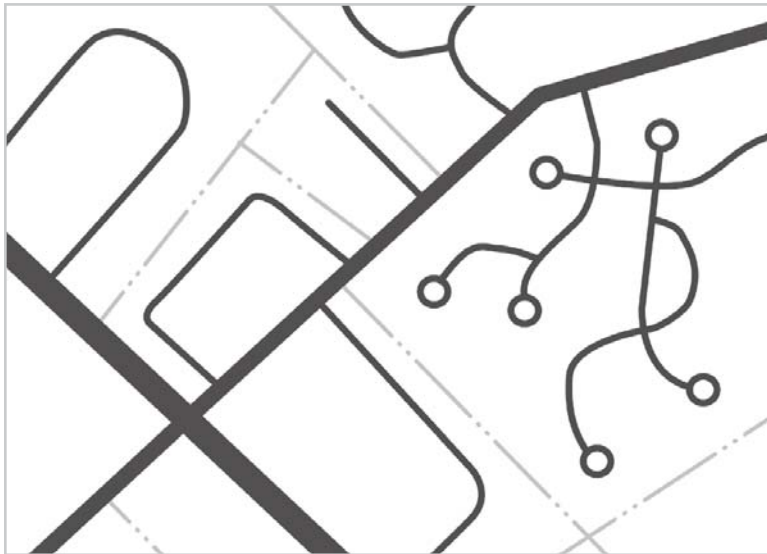


**Step 1: Zone**

**Step 2: Subdivide**



## Zoning-Dominated Model

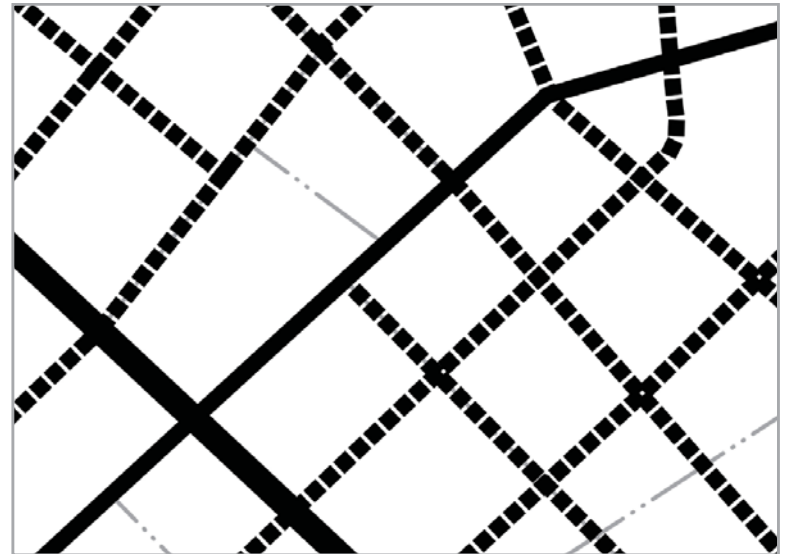


**Step 1: Zone**

**Step 2: Subdivide**



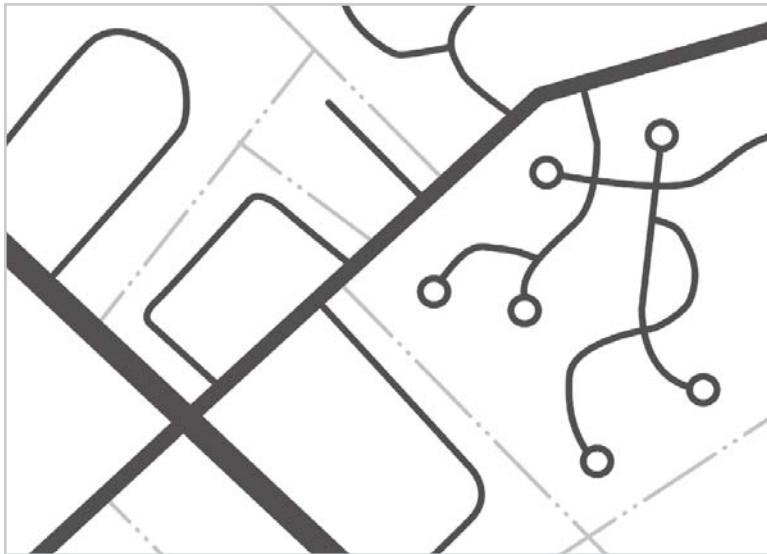
## Master Street Plan Model



**Step 1: Subdivide**



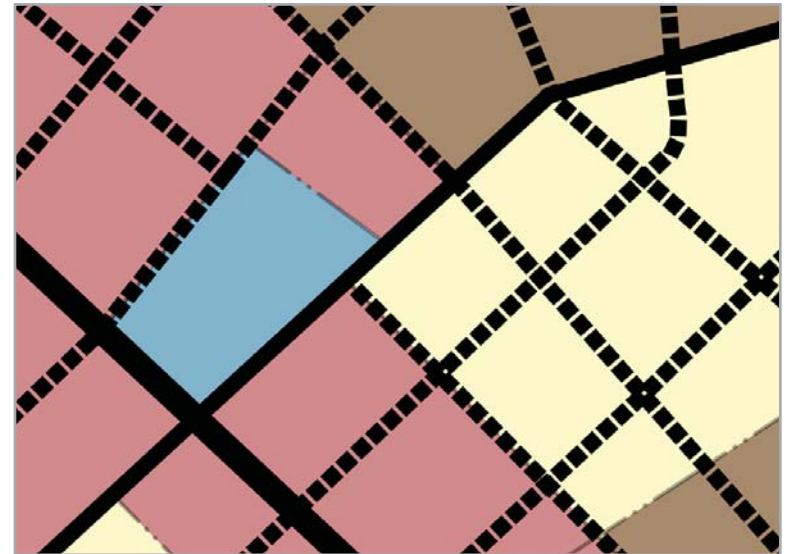
## Zoning-Dominated Model



**Step 1: Zone**

**Step 2: Subdivide**

## Master Street Plan Model

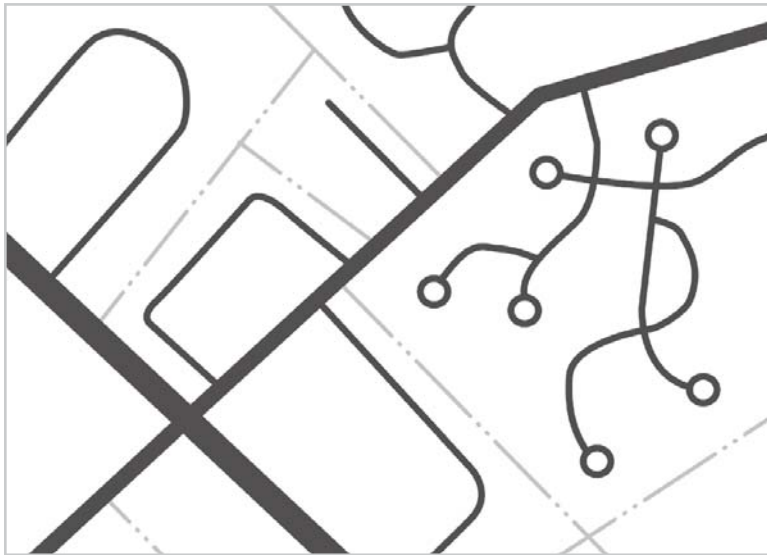


**Step 1: Subdivide**

**Step 2: Zone**



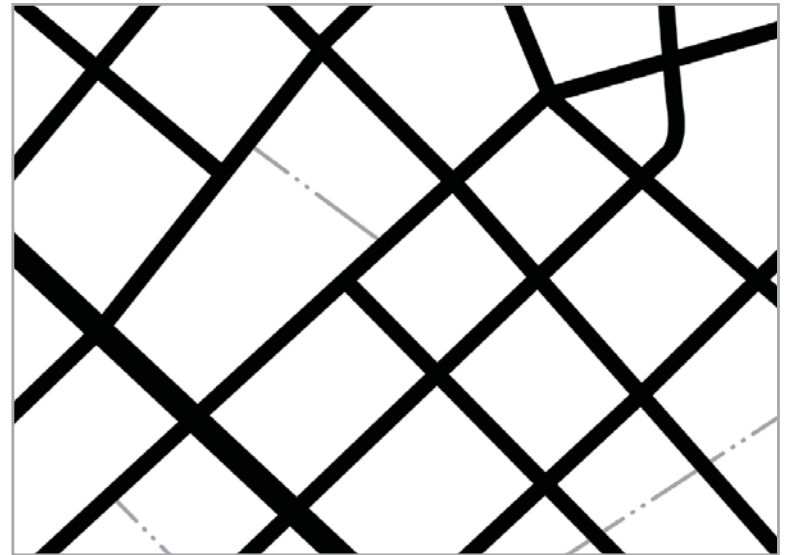
## Zoning-Dominated Model



**Step 1: Zone**

**Step 2: Subdivide**

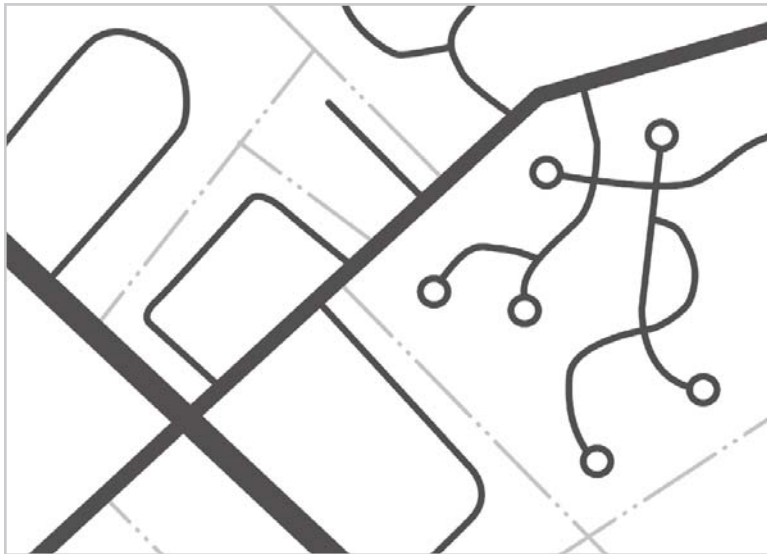
## Master Street Plan Model



**Step 1: Subdivide**

**Step 2: Zone**

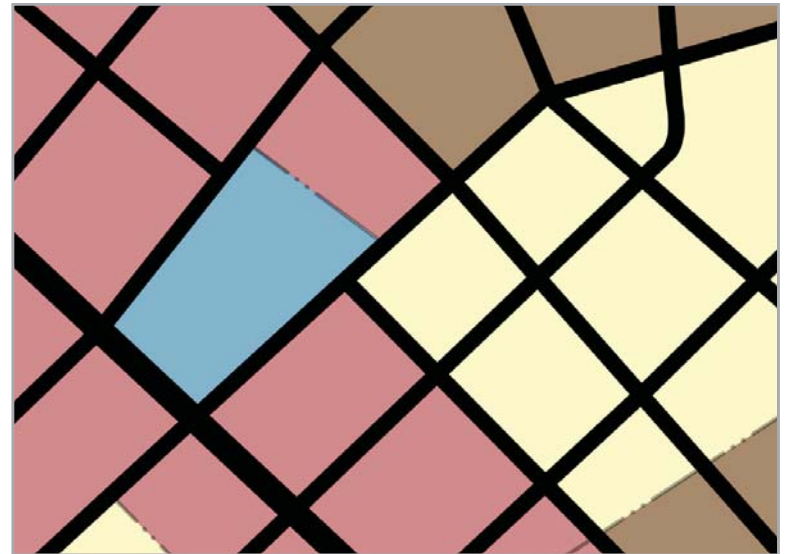
## Zoning-Dominated Model



**Step 1: Zone**

**Step 2: Subdivide**

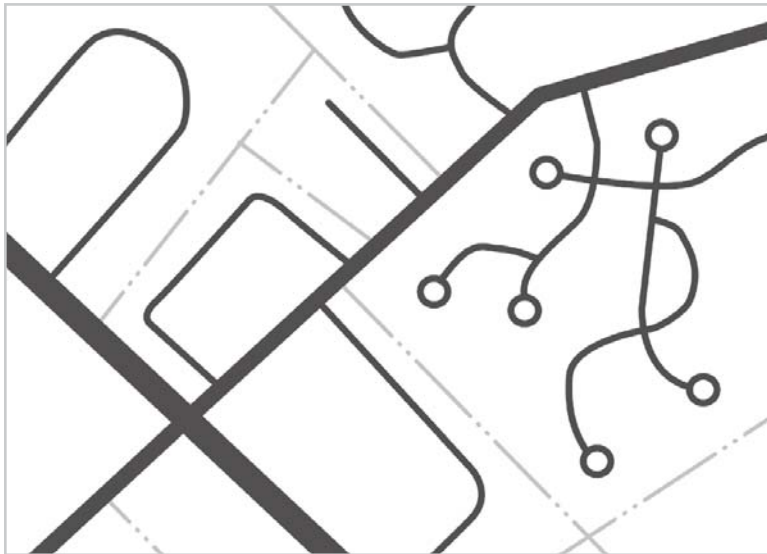
## Master Street Plan Model



**Step 1: Subdivide**

**Step 2: Zone**

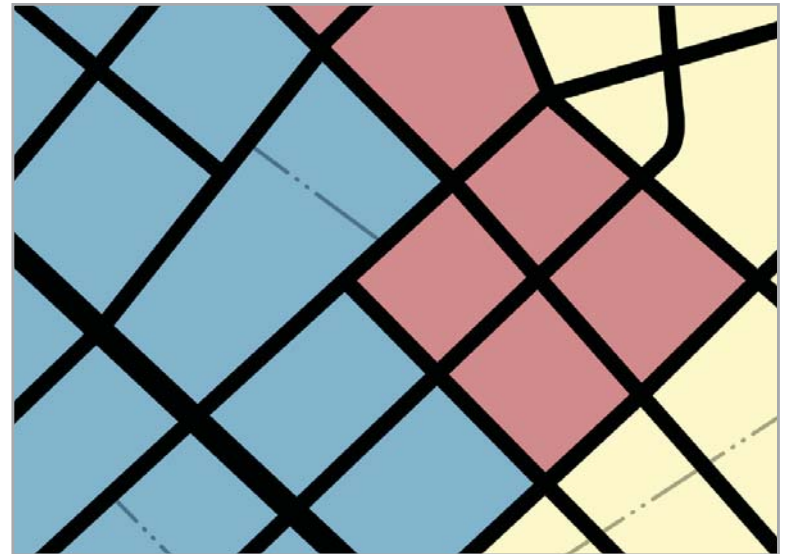
## Zoning-Dominated Model



**Step 1: Zone**

**Step 2: Subdivide**

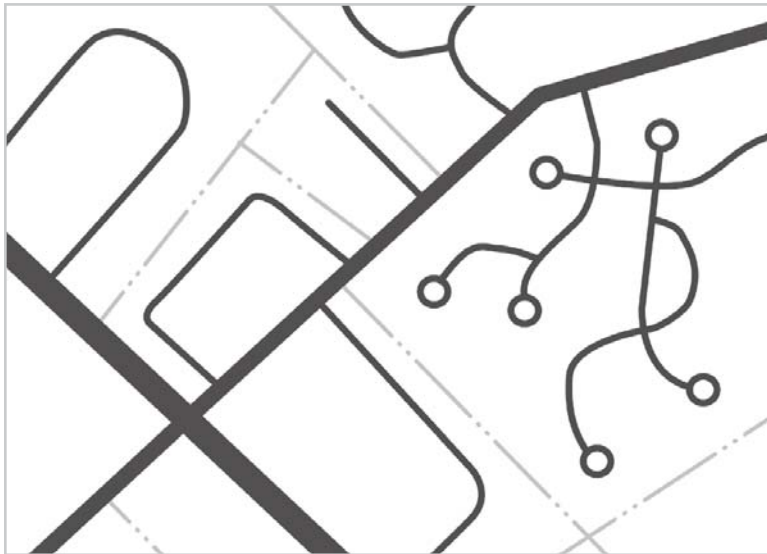
## Master Street Plan Model



**Step 1: Subdivide**

**Step 2: Zone**

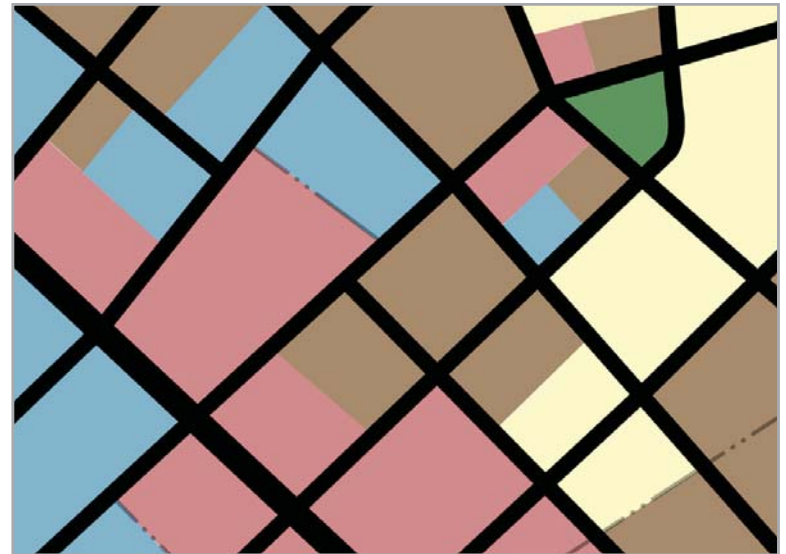
## Zoning-Dominated Model



**Step 1: Zone**

**Step 2: Subdivide**

## Master Street Plan Model



**Step 1: Subdivide**

**Step 2: Zone**



## Benefit #1: Free Up Municipal Resources

*As a pre-approved subdivision plat, the master street plan streamlines the review process. This allows planning authorities to focus on other issues.*

## **Benefit #2: Save Developers Time & Money**

*As a pre-approved subdivision plat, developers can get their projects completed more quickly and at reduced cost.*

## Benefit #3: Prescriptive

*No more rolling the dice with connectivity metrics\* or parcel-by-parcel subdivision reviews. Once the master street plan is established you know what form the city will eventually take.*

*\*Connectivity metrics do not work. See “The Metrics of Street Network Connectivity” submitted to Journal of Urbanism.*

## Benefit #4: Guides Incremental Development

*While the master street plan is established up front, its execution occurs over decades and centuries. As the city grows, the master street plan is there to guide that growth.*

**A master street plan is like a jigsaw puzzle...**

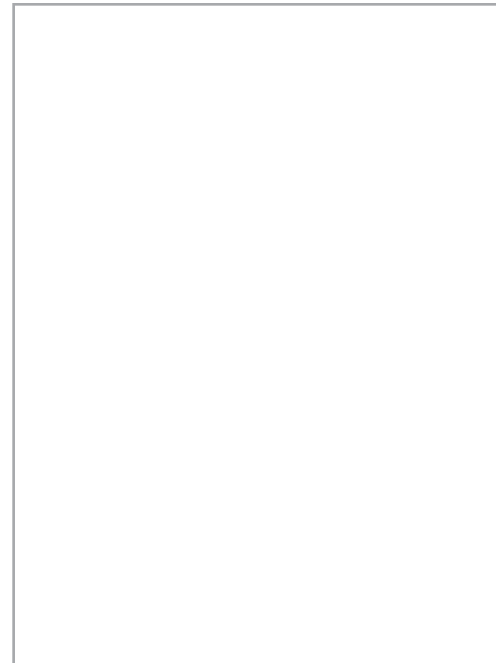


**A master street plan is like a jigsaw puzzle...**

**Goal**



**Process**

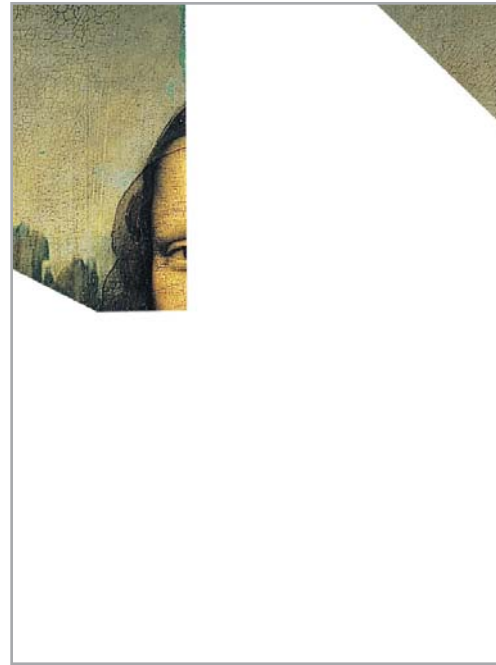


**A master street plan is like a jigsaw puzzle...**

**Goal**



**Process**

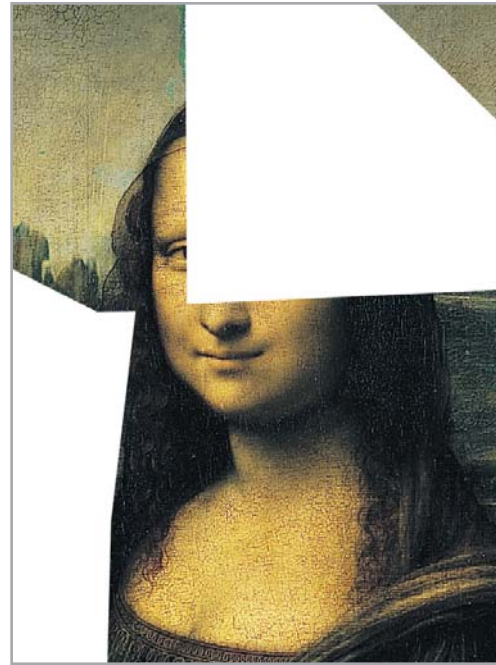


**A master street plan is like a jigsaw puzzle...**

**Goal**



**Process**



**A master street plan is like a jigsaw puzzle...**

**Goal**

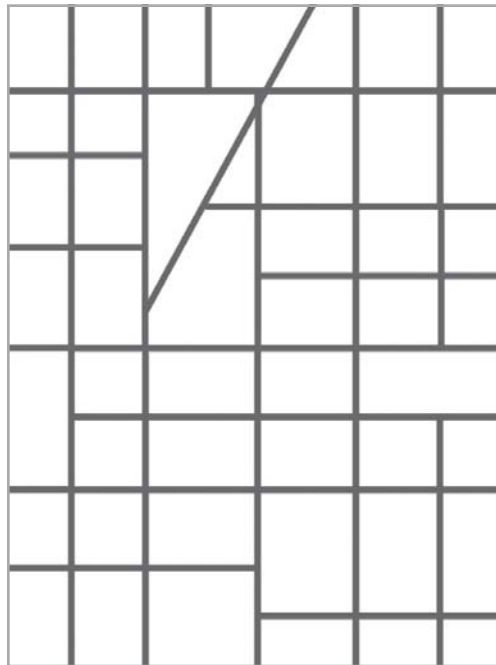


**Process**



**A master street plan is like a jigsaw puzzle...**

**Goal**



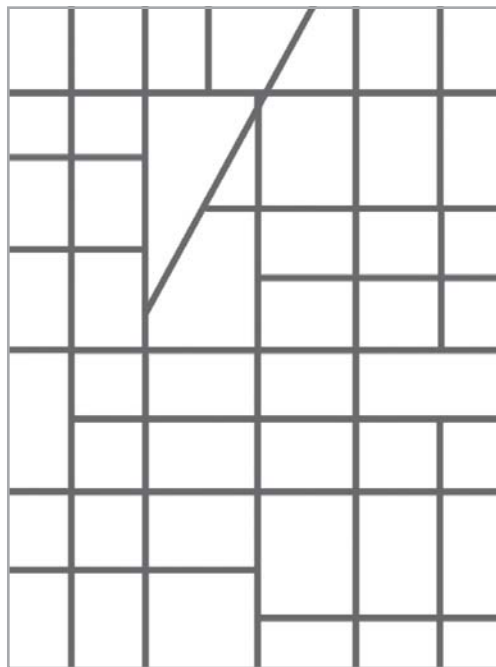
**Process**



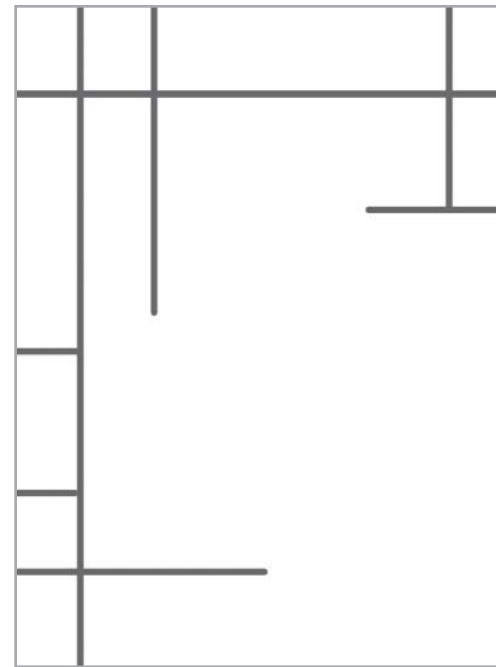


**A master street plan is like a jigsaw puzzle...**

**Goal**

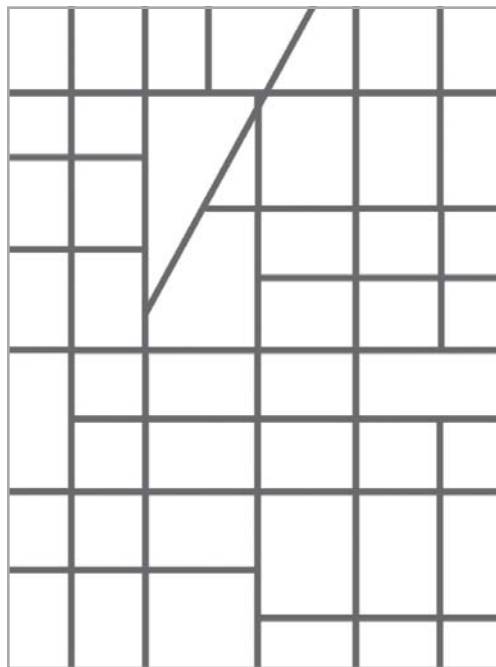


**Process**

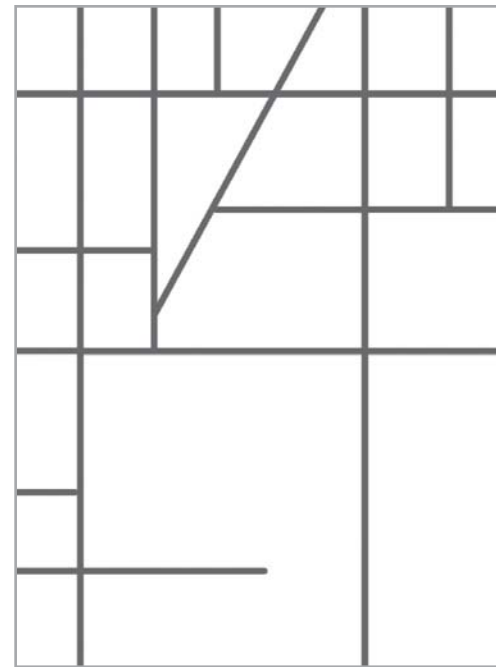


**A master street plan is like a jigsaw puzzle...**

**Goal**

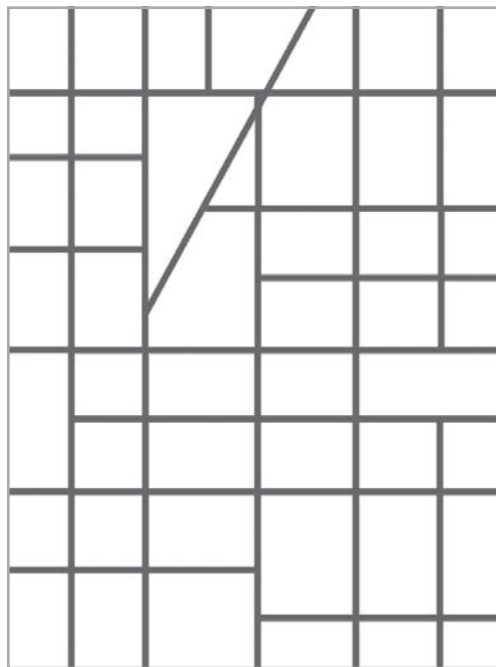


**Process**

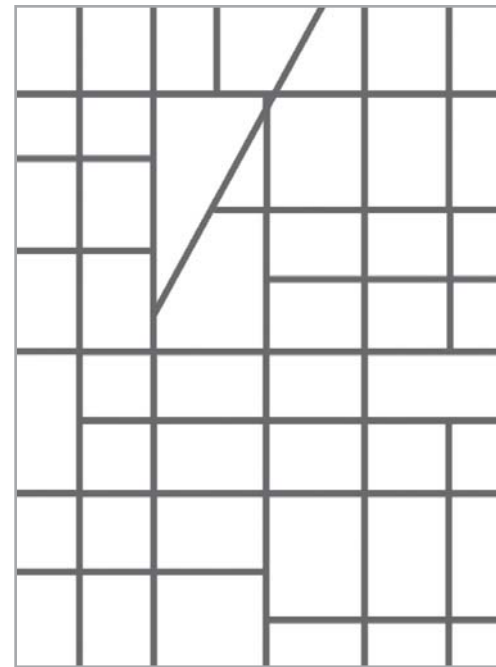


**A master street plan is like a jigsaw puzzle...**

**Goal**

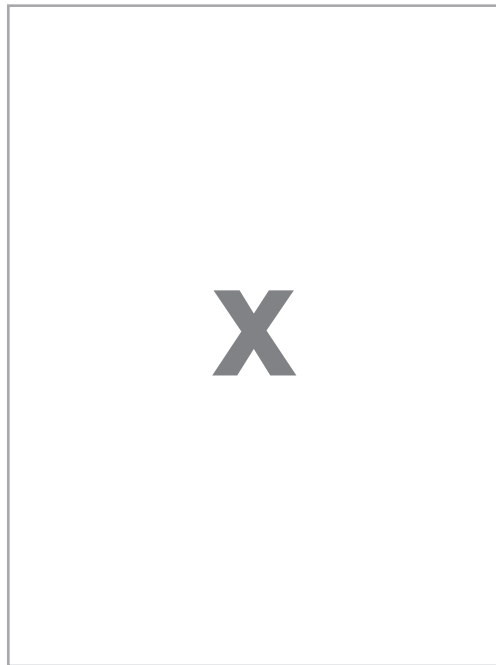


**Process**

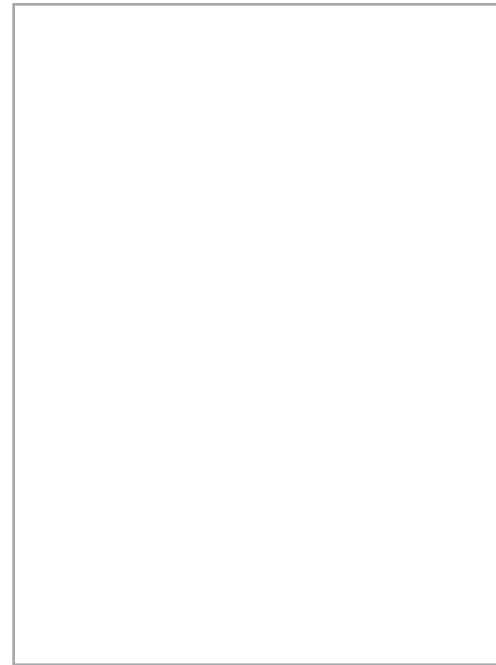


## Without a master street plan...

Goal

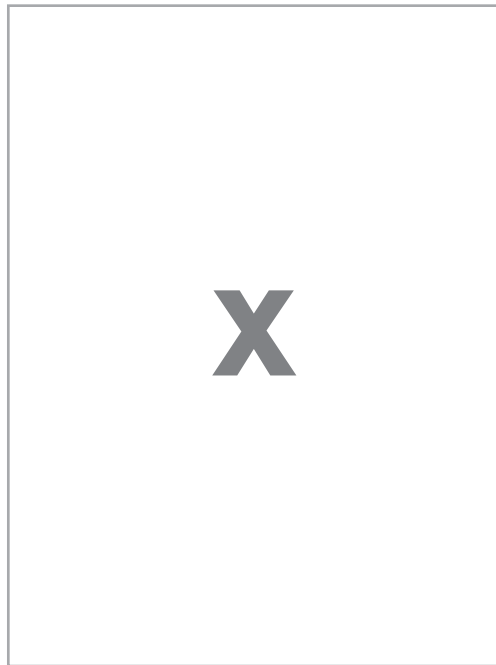


Process



## Without a master street plan...

Goal



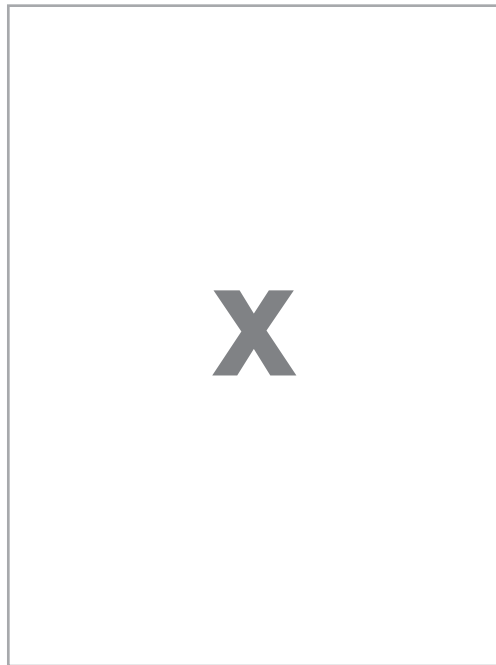
Process





## Without a master street plan...

Goal

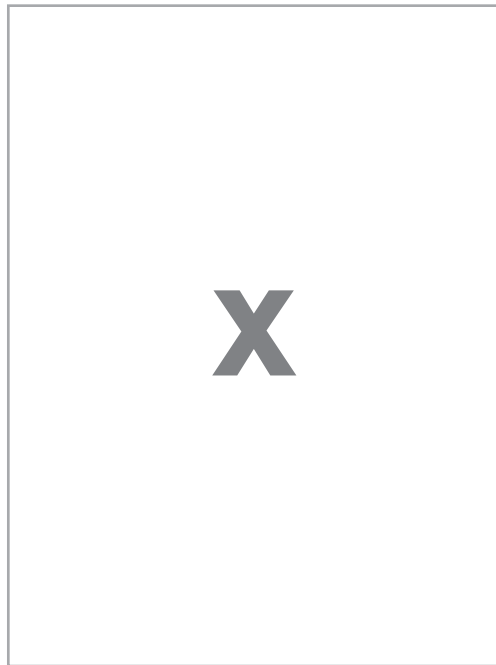


Process



## Without a master street plan...

Goal



Process



## Frederick Law Olmsted, Jr.

“The street plan has always been regarded as the foundation of all city planning.”

Address before the Second National Conference on City Planning, 1910

- A master street plan can ensure that the qualities of good urbanism (walkability, efficiency, etc.) will materialize.
- A master street plan is established up front but is executed incrementally over time.
- A master street plan grows with the city.
- The suburban form is inevitable without a master street plan. You may get lucky from time to time with pockets of good urbanism, but you will always be missing the big picture.

**[www.MasterStreetPlan.com](http://www.MasterStreetPlan.com)**