

Cities of the Future

Some words of caution for well-meaning policy makers...

Bimal Patel,

President CEPT University & Director HCP Design, Planning and Management Pvt. Ltd.

GRIHA 7th Summit

18th February 2016

Five questions that well meaning urban policy makers should ask themselves....

1. How well can we predict the future?



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Historical Population of the present area of New York City and its boroughs * [\[1\]](#)[\[39\]](#)[\[77\]](#)[\[78\]](#)

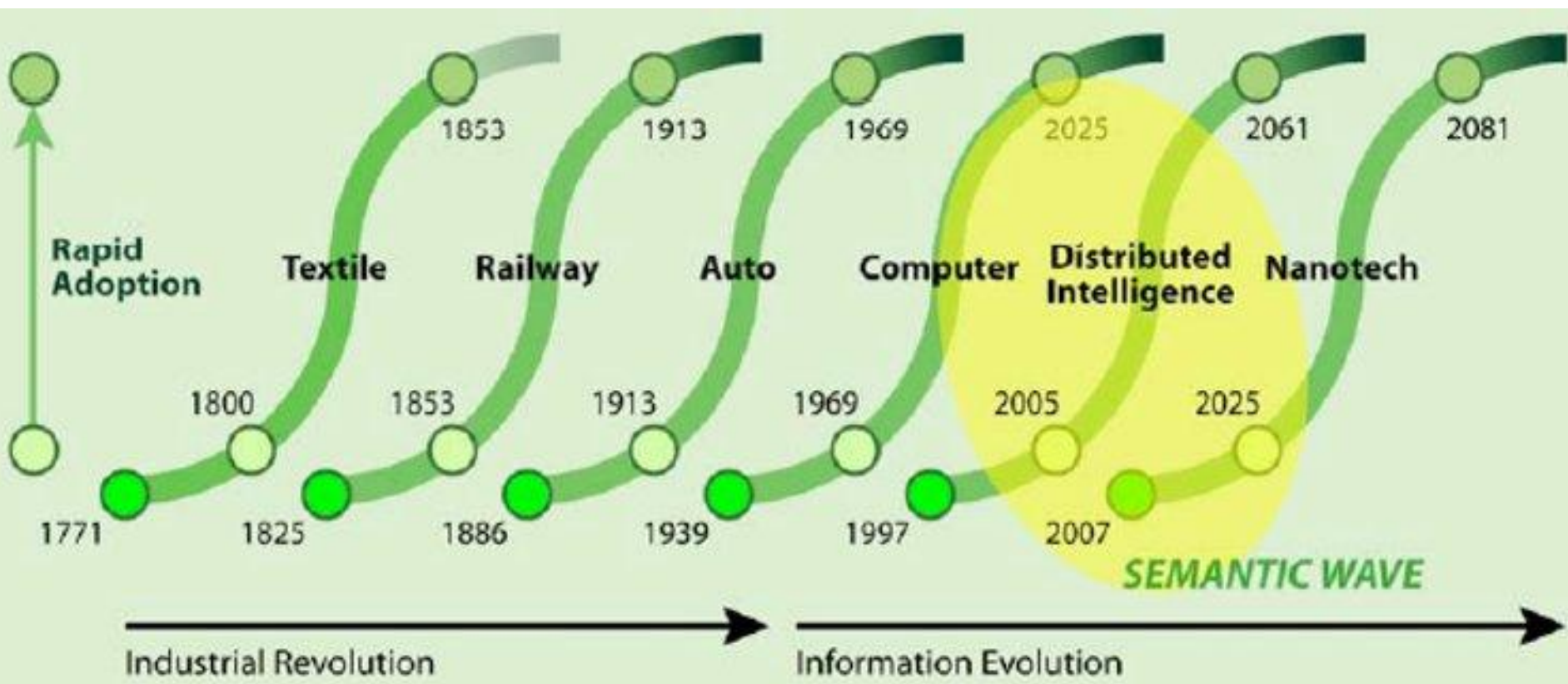
Year	Manhattan	Brooklyn	Queens	Bronx	Staten Is.	Total
1698	4,937	2,017	<i>n/a</i>	<i>n/a</i>	727	7,681
1771	21,863	3,623	<i>n/a</i>	<i>n/a</i>	2,847	28,423
1790	33,131	4,549	6,159	1,781	3,827	49,447
1800	60,515	5,740	6,642	1,755	4,563	79,215
1810	96,373	8,303	7,444	2,267	5,347	119,734
1820	123,706	11,187	8,246	2,782	6,135	152,056
1830	202,589	20,535	9,049	3,023	7,082	242,278
1840	312,710	47,613	14,480	5,346	10,965	391,114
1850	515,547	138,882	18,593	8,032	15,061	696,115
1860	813,669	279,122	32,903	23,593	25,492	1,174,779
1870	942,292	419,921	45,468	37,393	33,029	1,478,103
1880	1,164,673	599,495	56,559	51,980	38,991	1,911,698
1890	1,441,216	838,547	87,050	88,908	51,693	2,507,414
†1900	1,850,093	1,166,582	152,999	200,507	67,021	3,437,202
1910	2,331,542	1,634,351	284,041	430,980	85,969	4,766,883
1920	2,284,103	2,018,356	469,042	732,016	116,531	5,620,048
1930	1,867,312	2,560,401	1,079,129	1,265,258	158,346	6,930,446
1940	1,889,924	2,698,285	1,297,634	1,394,711	174,441	7,454,995
1950	1,960,101	2,738,175	1,550,849	1,451,277	191,555	7,891,957
1960	1,698,281	2,627,319	1,809,578	1,424,815	221,991	7,781,984
1970	1,539,233	2,602,012	1,986,473	1,471,701	295,443	7,894,862
1980	1,428,285	2,230,936	1,891,325	1,168,972	352,121	7,071,639
1990	1,487,536	2,300,664	1,951,598	1,203,789	378,977	7,322,564
2000	1,537,195	2,465,326	2,229,379	1,332,650	443,728	8,008,278
2010	1,585,873	2,504,700	2,230,722	1,385,108	468,730	8,175,133
2013	1,626,159	2,592,149	2,296,175	1,418,733	472,621	8,405,837

* All population figures are consistent with present-day boundaries.

† First census after the consolidation of the [five boroughs](#)

Over the twentieth century the amount of floor space in Manhattan increased despite the fact that its population fell

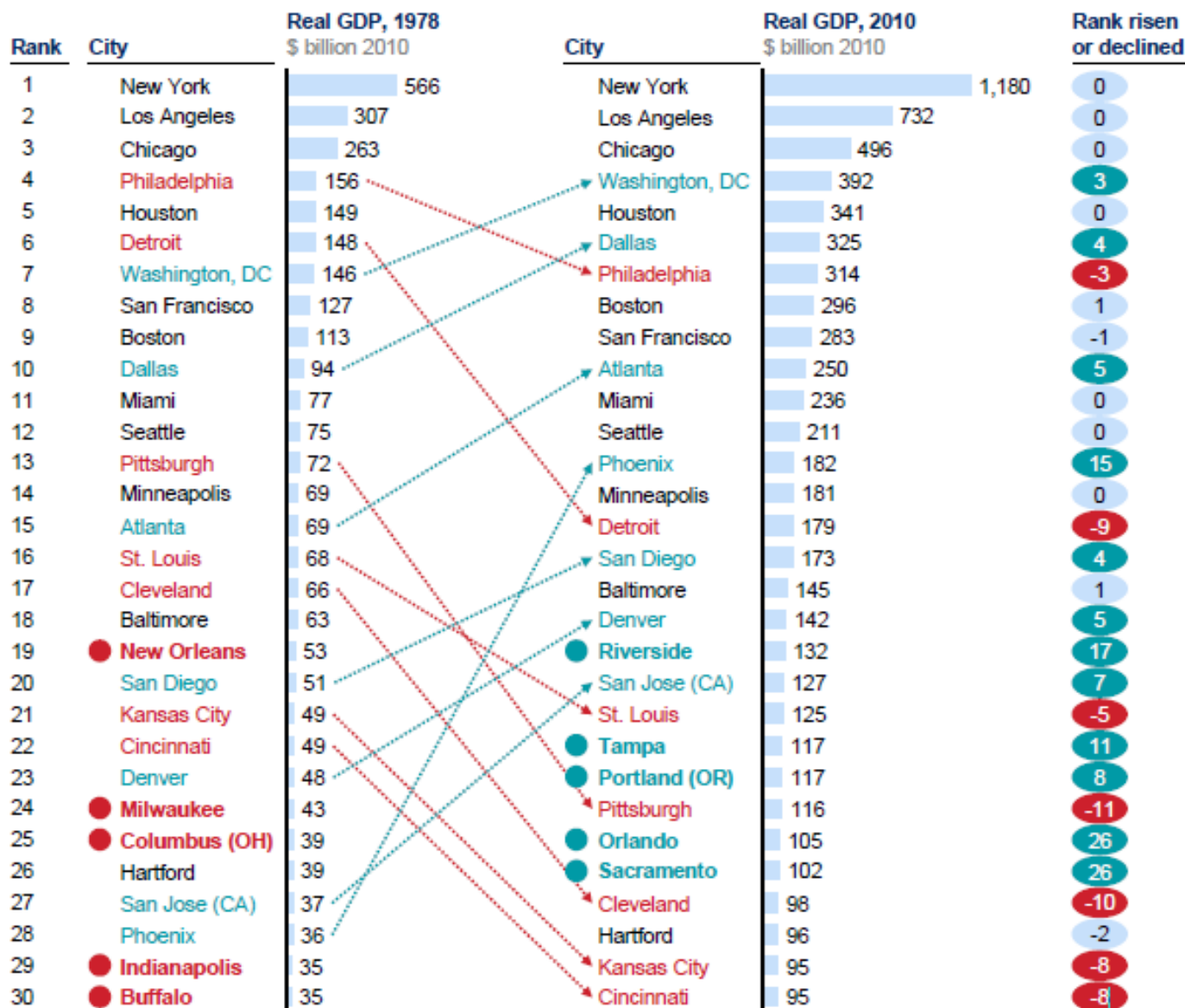
How much of today could we have predicted two decades ago?



Source: Norman Poire, Merrill Lynch, based on Joseph Schumpeter

There have been significant shifts in the economic weight of the top US cities over a long period

- Entered top 30
- ⋯→ Rose at least 3 spots
- Dropped from top 30
- ⋯→ Declined at least 3 spots



SOURCE: Moody's Analytics; McKinsey Global Institute analysis

We should take uncertainty about the future very seriously...don't make rigid policies...

2. Why are codes so difficult to enforce?

VOLUME 1

UDPFI

URBAN DEVELOPMENT PLANS
FORMULATION & IMPLEMENTATION
GUIDELINES

MINISTRY OF URBAN AFFAIRS & EMPLOYMENT
GOVERNMENT OF INDIA, NEW DELHI

AUGUST, 1996

AHMEDABAD URBAN DEVELOPMENT AREA

PART-III

GENERAL DEVELOPMENT CONTROL REGULATIONS

NOTIFICATION VIDE NO. GH/V/59 OF 2002/DVP/1599/1368/L,
DATED 18th MAY, 2002 HAS BEEN SANCTIONED BY
THE GOVT. OF GUJARAT UNDER SUB-CLAUSE (ii) OF CLAUSE (a)
AND SUB-SECTION (1) OF SECTION-17 IN
THE OFFICIAL GAZETTE.

AND

CORRIGENDUM NOTIFICATION
NO. GH/V/140 OF 2002/DVP/1599/1368/L,
DATED 8th OCTOBER, 2002



AUDA

Ahmedabad Urban Development Authority

DEVELOPMENT CONTROL REGULATIONS WITH RESPECT TO STRUCTURAL SAFETY



Ahmedabad Urban Development Authority
(AUDA)

Ahmedabad: Household Income Distribution

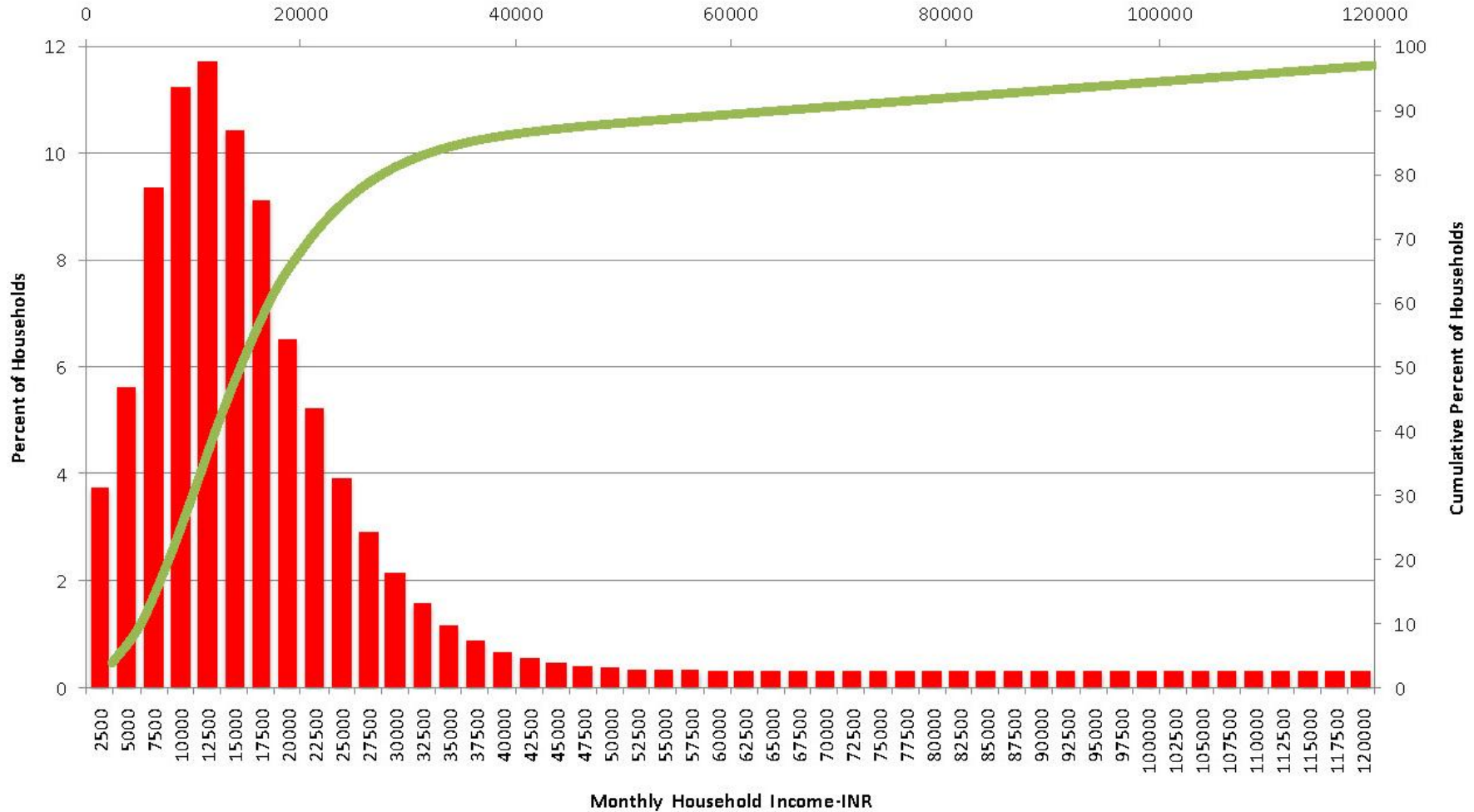


Figure 4a. Income Distribution in Ahmedabad

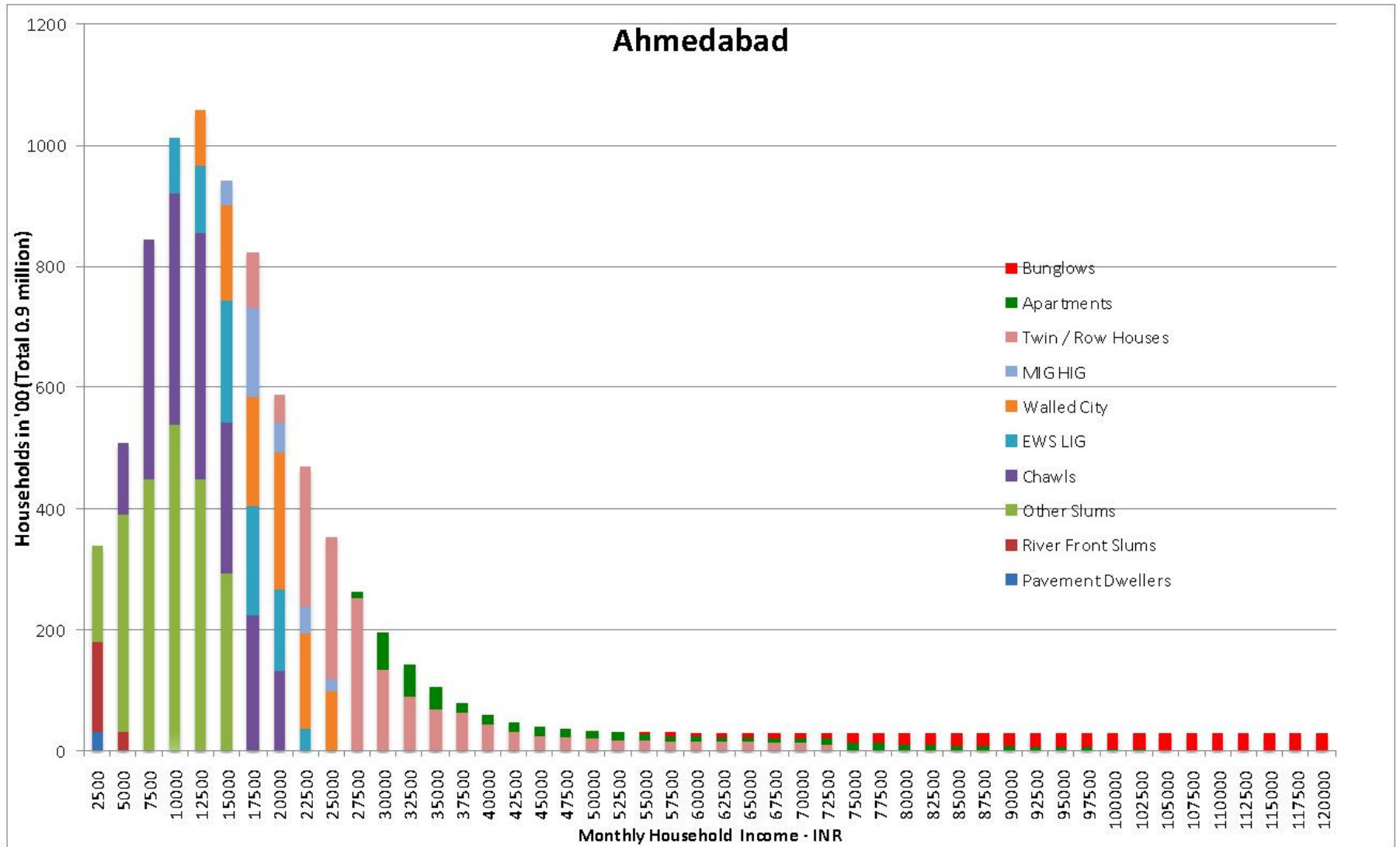
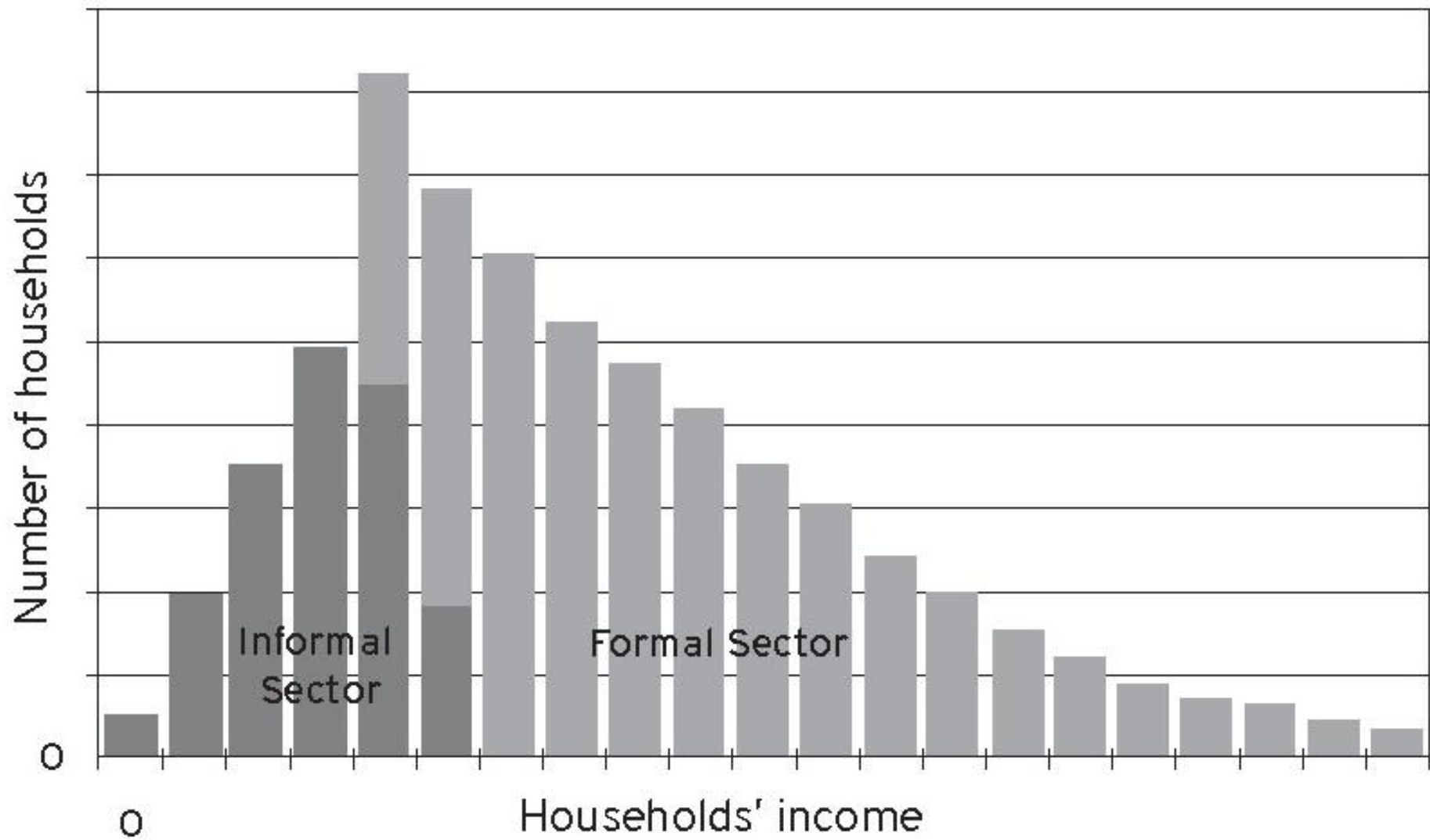


Figure 13: Ahmedabad Household Income and Housing Typology



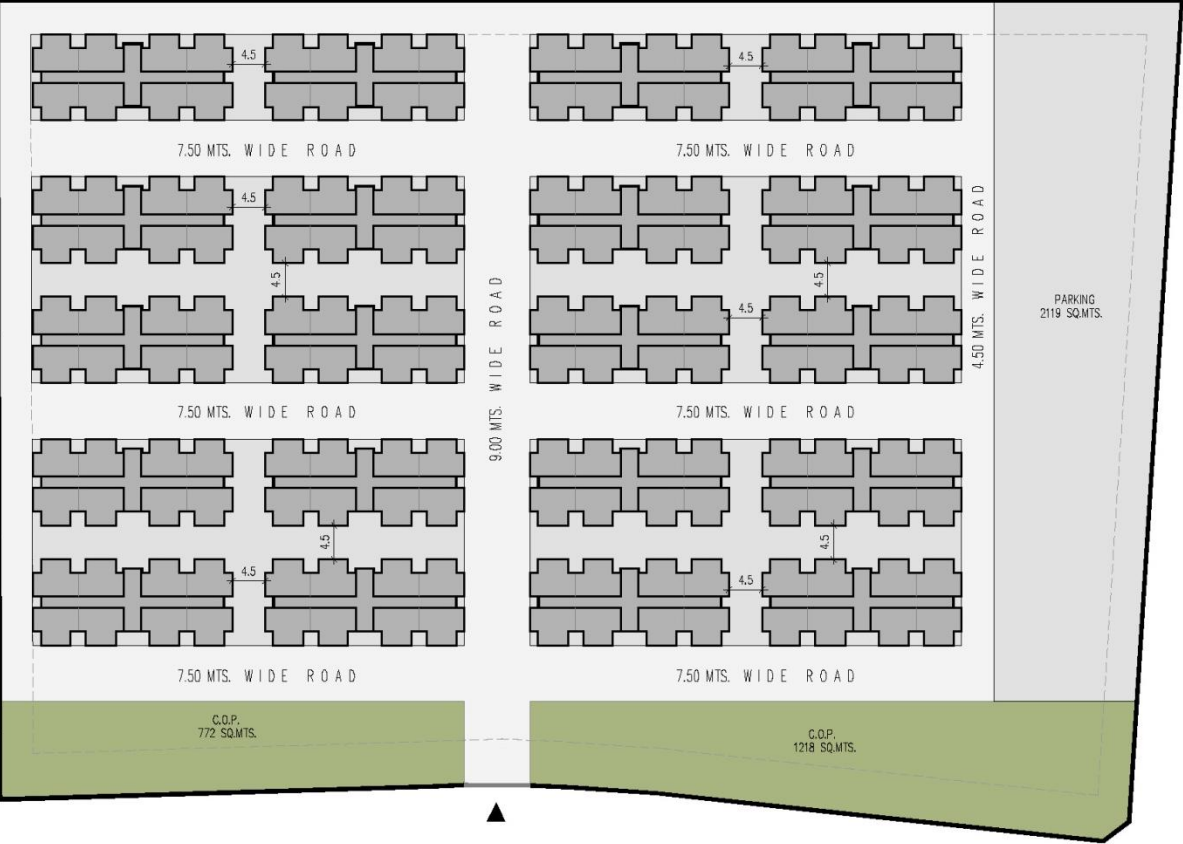
Pilot Project – AUDA Housing at Chandlodiya



Existing Bye-laws

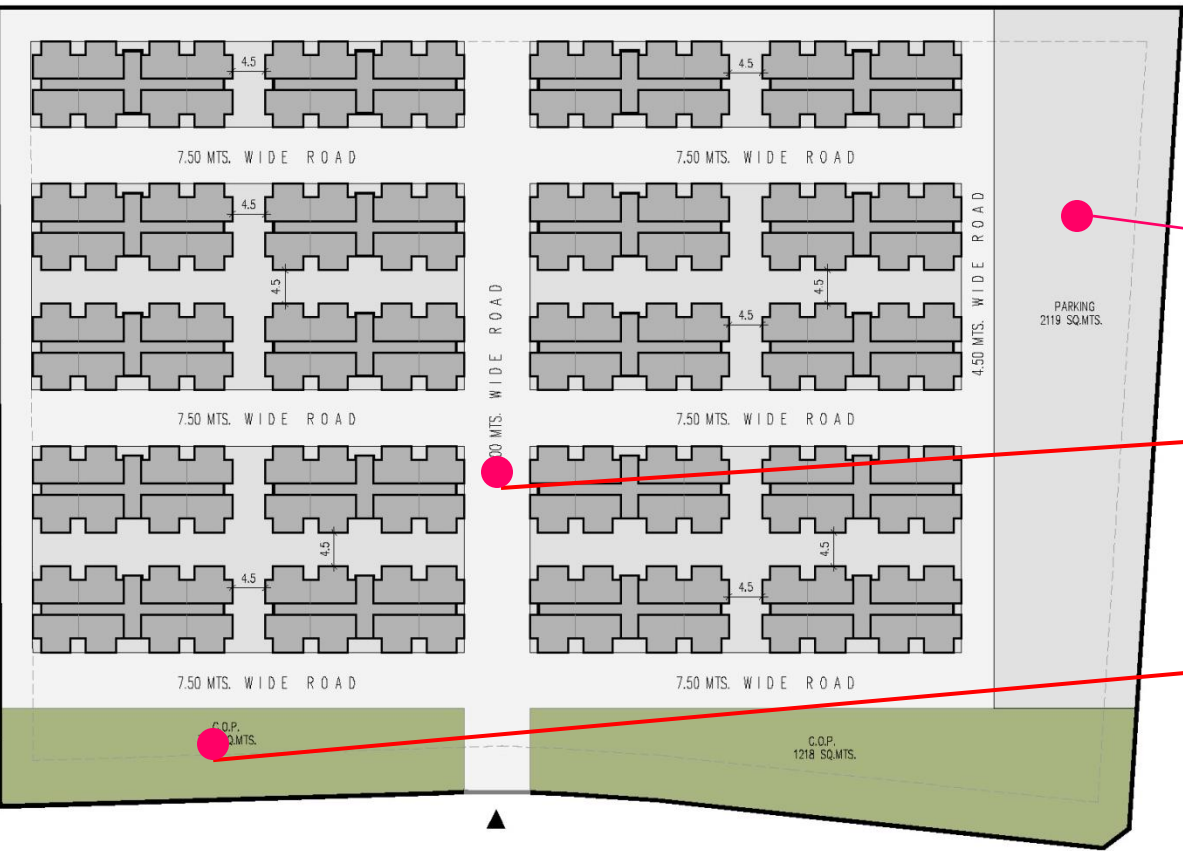
Regulation	As per GDCR
1. FSI requirement	1.8
2. CP (Common Plot) requirement	10 % of Plot area
Minimum size of the open space	200 sq m
Minimum dimension of any side	10.5 m
3. Number of floors (without elevators)	G + 3
4. Maximum ground coverage	45% of Plot area
5. Internal Road width for road length	
up to 150 m	7.5 m wide
up to 300 m	9.0 m wide
6. Internal approach road width	
between 15 m to 40 m	4.5 m wide
7. Minimum distance between two blocks	
Façade with openings	4.5 m wide
Façade without openings	4.5 m wide
8. Front and rear margin	As per GDCR
9. Minimum staircase flight width	1.2 m

Master Plan under current Bye-laws



Carpet Area:	24.3 sq m
Built-up Area:	27.2 sq m
Plot area:	17,000 sq m
FSI utilized:	1.20
No. of floors:	G + 3
No. of units:	640
Ground coverage:	30%
CP:	12%
Roads:	29%
Parking:	29%

Master Plan under current Bye-laws



Consolidated parking space

Wide access streets

Consolidated open space

MAIN ROAD

Carpet Area:	24.3 sq m
Built-up Area:	27.2 sq m
Plot area:	17,000 sq m
FSI utilized:	1.20
No. of floors:	G + 3
No. of units:	640
Ground coverage:	30%
CP:	12%
Roads:	29%
Parking:	29%

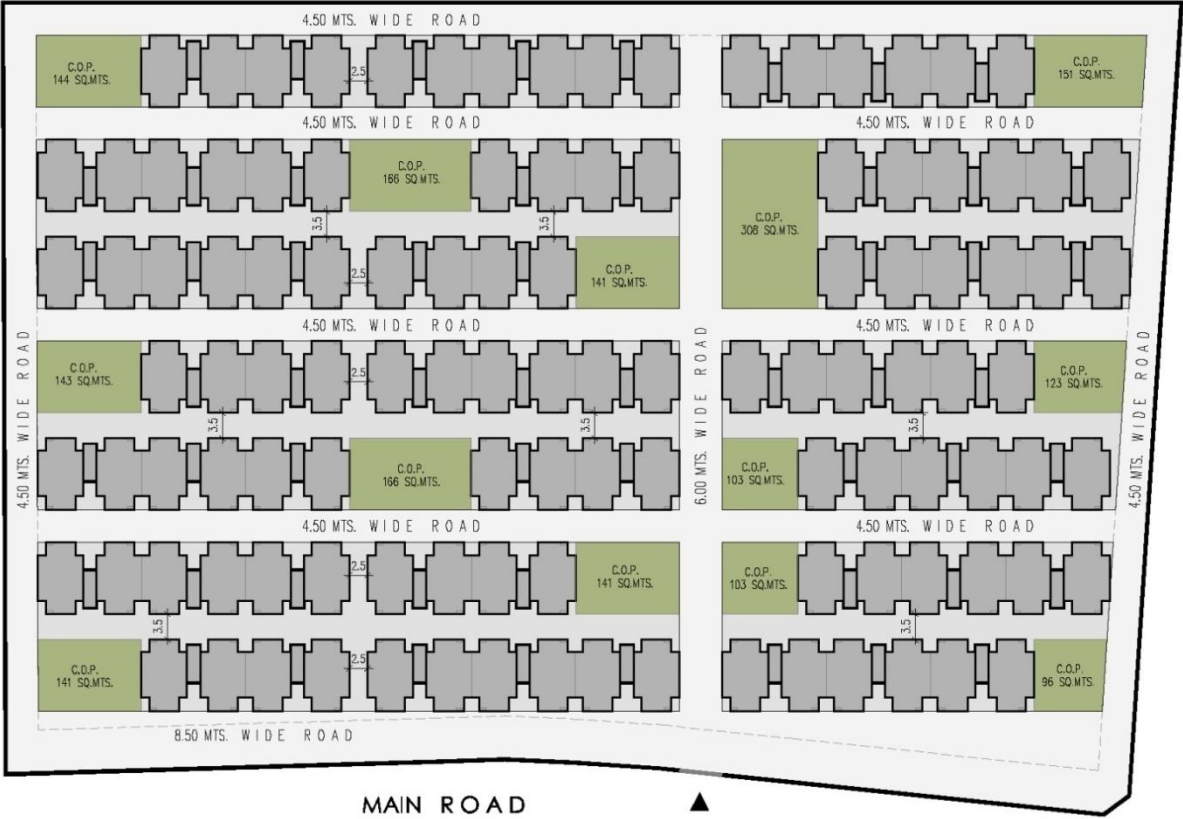
Cost for Housing

	Current Regulations
General details	
Built-up area per unit (sq m)	27.2
Total Built-up area (sq m) (incl. common areas)	21,776
No. of units	640
Total Built-up area per unit (sqm)	34.03
a) Land cost	
Plot Area (in sq.m)	17,000
Land Cost (Rs per Sq.m)	25,000
Total Land cost (Rs.)	425,000,000
Land cost (Rs per sq.m)	19,517
Land cost per unit (Rs)	664,063
b) Construction cost with profit	
Construction cost (Rs/sq.m)	8,600
c) Cost of Additional FSI	
Cost of FSI per sq. m (Jantri Rs. 5000)	-
Total FSI cost per unit	-
e) Total cost (a+b+c)	
Total cost per unit(Rs.)	956,678
f) Stamp duty / registration charges	
Stamp duty @ 4.9% (Rs.)	46,877
Registration charges @ 1.1%	10,523
Total charges (Rs.)	57,401
Total Cost post stamp duty/registration (e+f)	
Total Cost per unit (Rs.)	1,014,078
Reduction in cost (Rs.)	

A Few Changes in Existing Bye-laws

Regulation	As per GDCR	Relaxed GDCR
1. FSI requirement	1.8	2.25
2. CP (Common Plot) requirement	10 % of Plot area	10 % of Plot area
Minimum size of the open space	200 sq m	No spec. requirement
Minimum dimension of any side	10.5 m	No spec. requirement
3. Number of floors (without elevators)	G + 3	G + 4
4. Maximum ground coverage	45% of Plot area	No Limit Proposed
5. Internal Road width for road length		
up to 150 m	7.5 m wide	6.0 m wide
up to 300 m	9.0 m wide	6.0 m wide
6. Internal approach road width		
between 15 m to 40 m	4.5 m wide	4.5 m wide
7. Minimum distance between two blocks		
Façade with openings	4.5 m wide	3.5 m wide
Façade without openings	4.5 m wide	2.5 m wide
8. Front and rear margin	As per GDCR	As per GDCR
9. Minimum staircase flight width	1.2 m	0.9 m

Master Plan with Revision in Bye-laws



Carpet Area:	24.3 sq m	24.3 sq m
Built-up Area:	27.2 sq m	27.2 sq m
Plot area:	17,000 sq m	17000 sq.m
FSI utilized:	1.20	1.8
No. of floors:	G + 3	G + 4
No. of units:	640	1120
Ground coverage:	30%	35%
CP:	12%	11%
Roads:	29%	32%
Parking:	29%	22%

Master Plan with Revision in Bye-laws



Parking permitted on smaller open spaces and on streets

Slightly narrow streets

Distributed open spaces

Carpet Area:	24.3 sq m	24.3 sq m
Built-up Area:	27.2 sq m	27.2 sq m
Plot area:	17,000 sq m	17000 sq.m
FSI utilized:	1.20	1.8
No. of floors:	G + 3	G + 4
No. of units:	640	1120
Ground coverage:	30%	35%
CP:	12%	11%
Roads:	29%	32%
Parking:	29%	22%

Common plot - Before



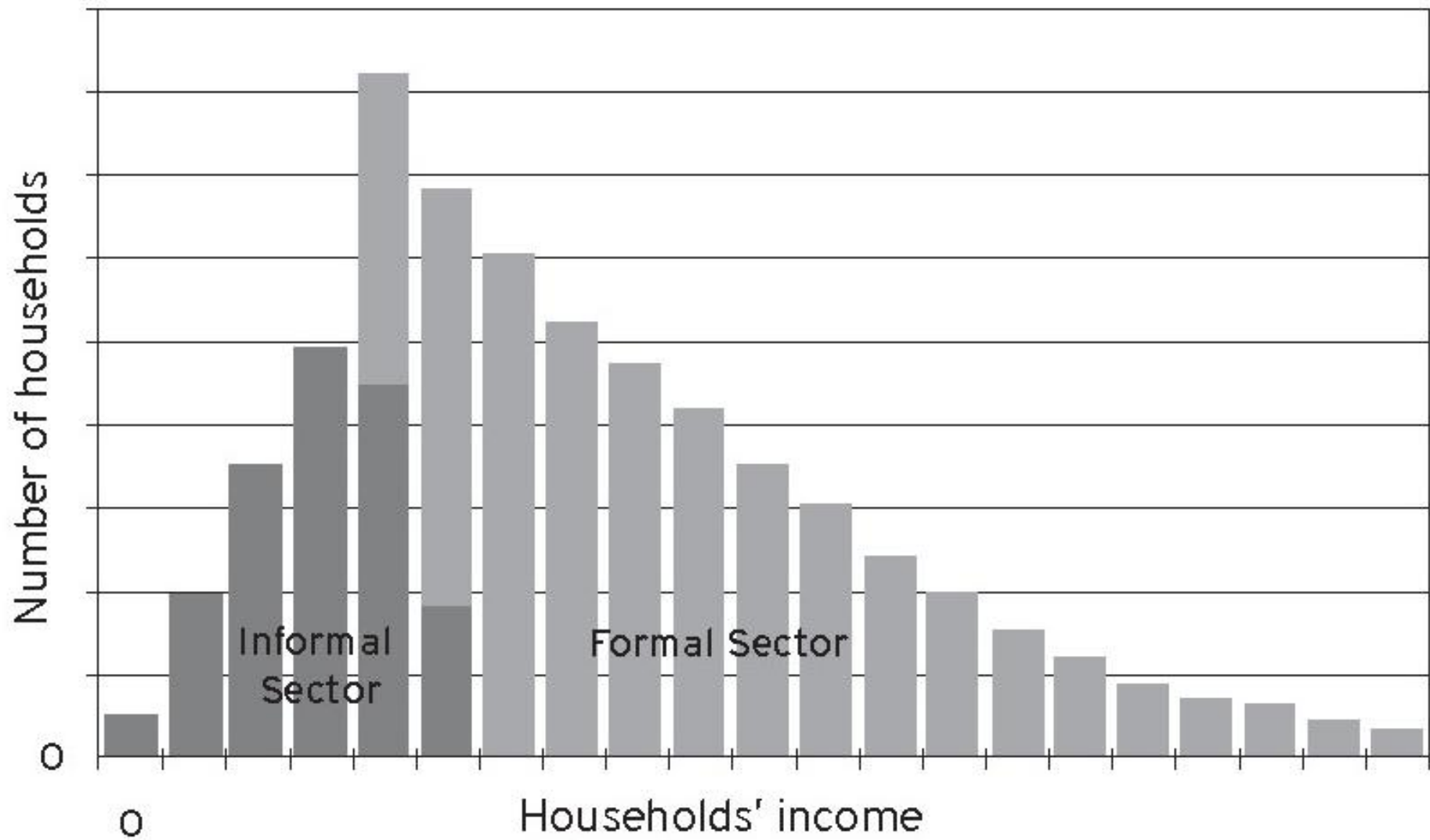
Main Access Streets - After



Reduced widths of roads are sufficient ...open spaces being utilized for interaction, parking etc.

Comparison of Costs for Housing

	Current Regulations	Proposed Revised Regulations
General details		
Built-up area per unit (sq m)	27.2	27.2
Total Built-up area (sq m) (incl. common areas)	21,776	33,264
No. of units	640	1120
Total Built-up area per unit (sqm)	34.03	29.70
a) Land cost		
Plot Area (in sq.m)	17,000	17,000
Land Cost (Rs per Sq.m)	25,000	25,000
Total Land cost (Rs.)	425,000,000	425,000,000
Land cost (Rs per sq.m)	19,517	12,777
Land cost per unit (Rs)	664,063	379,464
b) Construction cost with profit		
Construction cost (Rs/sq.m)	8,600	8,600
c) Cost of Additional FSI		
Cost of FSI per sq. m (Jantri Rs. 5000)	-	-
Total FSI cost per unit	-	-
e) Total cost (a+b+c)		
Total cost per unit(Rs.)	956,678	634,884
f) Stamp duty / registration charges		
Stamp duty @ 4.9% (Rs.)	46,877	31,109
Registration charges @ 1.1%	10,523	6,984
Total charges (Rs.)	57,401	38,093
Total Cost post stamp duty/registration (e+f)		
Total Cost per unit (Rs.)	1,014,078	672,977
Reduction in cost (Rs.)		341,101 (34%)



Take affordability in to consideration....

Standards can be ratcheted up along with economic development....



Some tests you're better off not doing yourself.

Only trust a specialist's advice for a reliable mammogram. Mercedes-Benz, sponsors of the Dutch Breast Cancer Foundation.

Mercedes-Benz



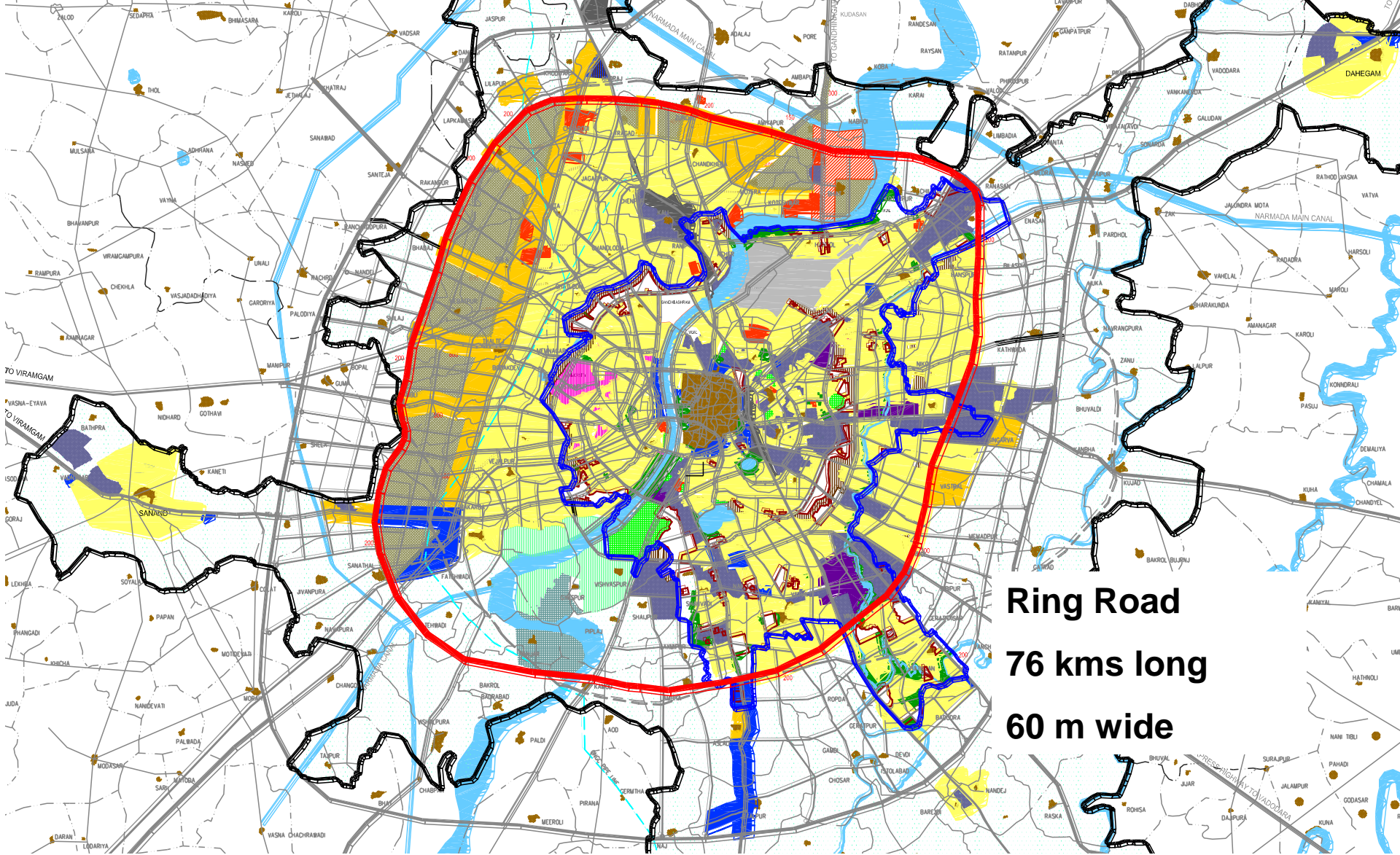
We can have multiple standards....

Cake, Bread and Chapatti

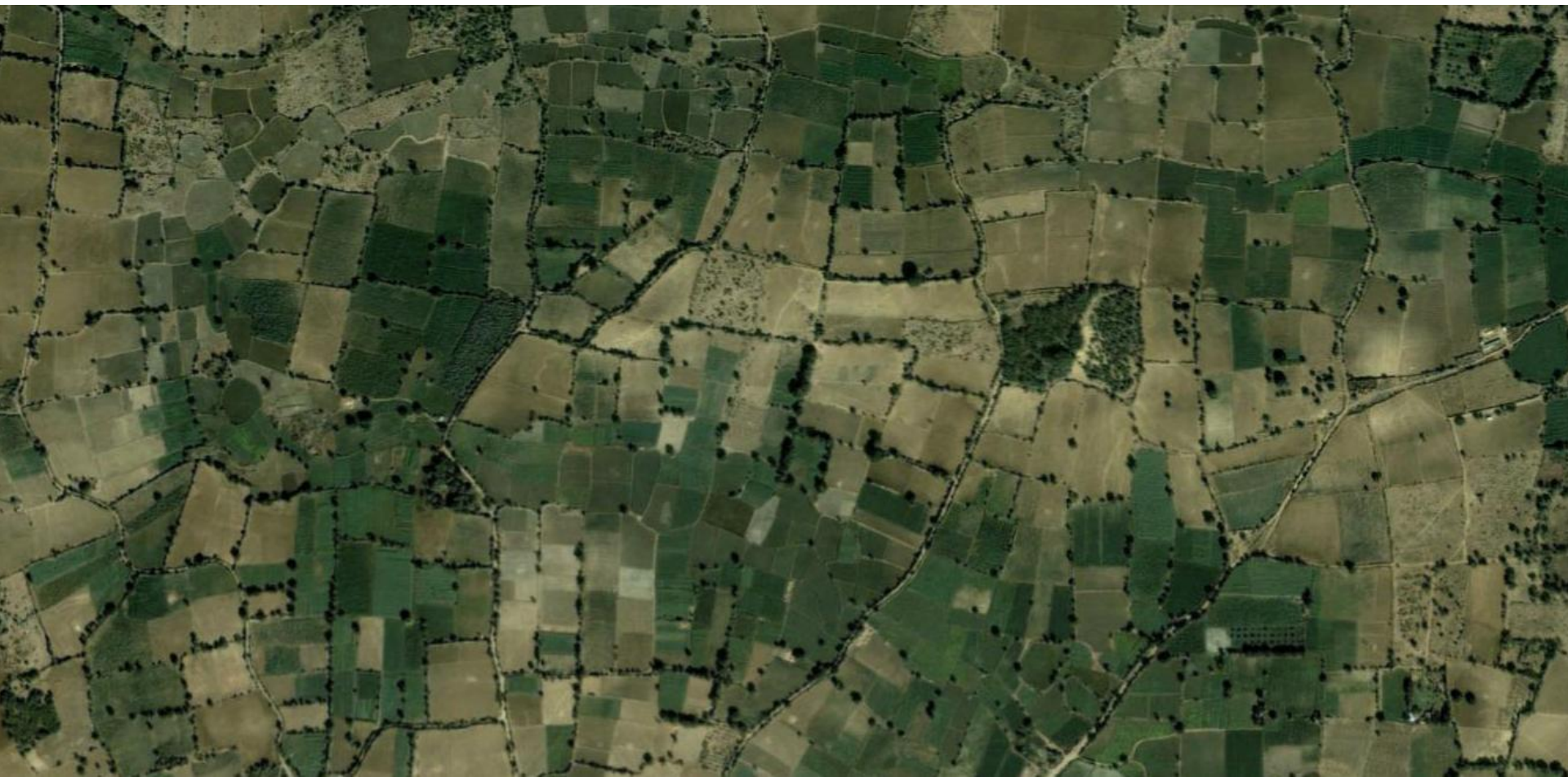
A Proposal For Graded Development Standards

Item	Cake	Bread	Chapatti
Approach Length to 6m street up to 50 m	3.00 m for self-use residential; 4.50 m for other residential use; 6.00 m otherwise.	3.00 m	<i>N/a; however, 3.00 m is strongly recommended.</i> If the recommendation is not followed, then written notice shall be given to all buyers of real estate on such plots, stating ‘Some or all real estate on this plot is located up to 50 meters away from a 3.00-meter wide street so that an ambulance might have difficulties to reach near these units in an emergency’.
Approach Length to 6m street above 50 m and up to 100 m	6.00 m	4.50 m	3.00 m
Others	6.00 m		

3. When are public minded policies and projects difficult to implement?



Ring Road
76 kms long
60 m wide



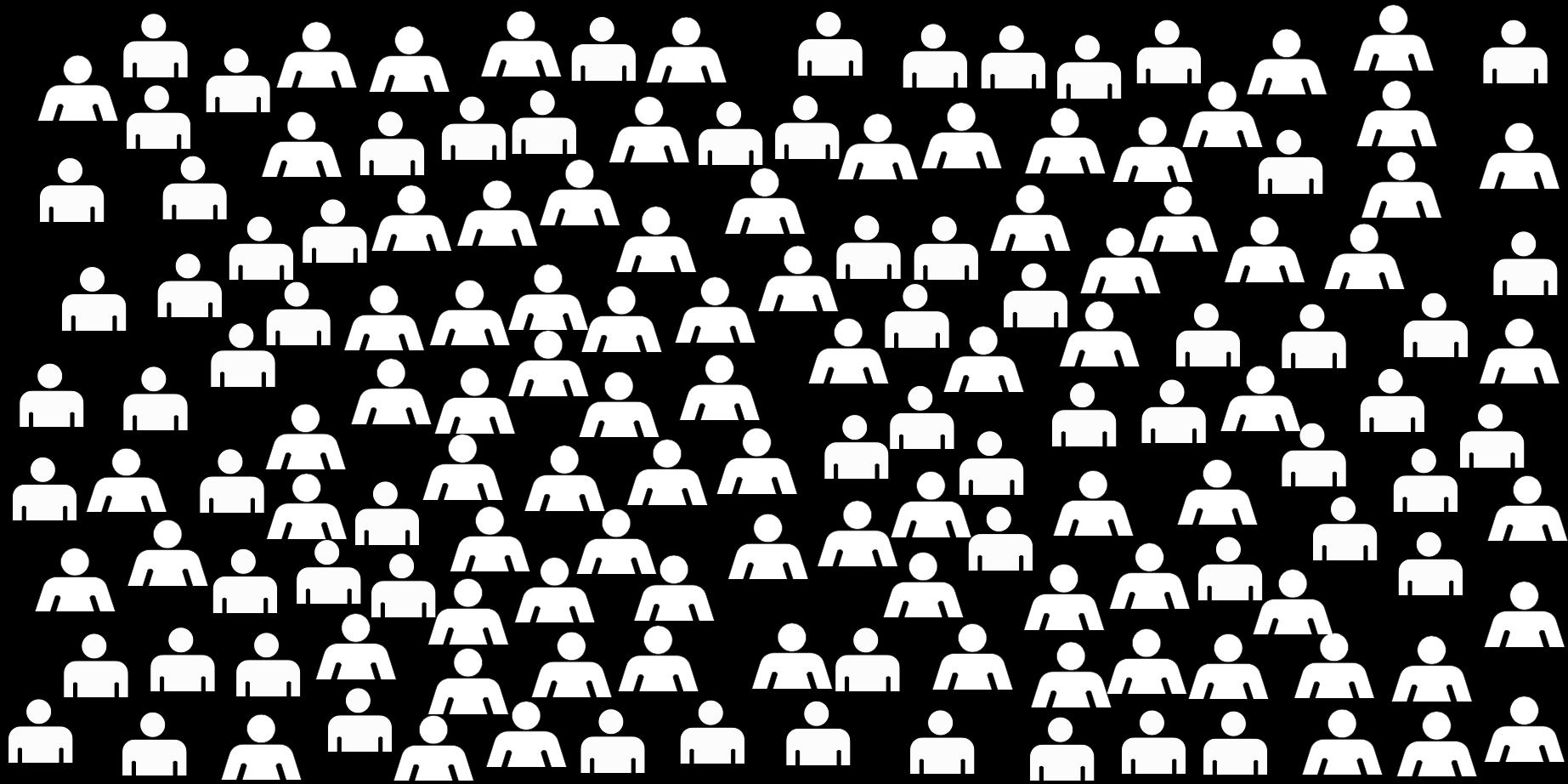


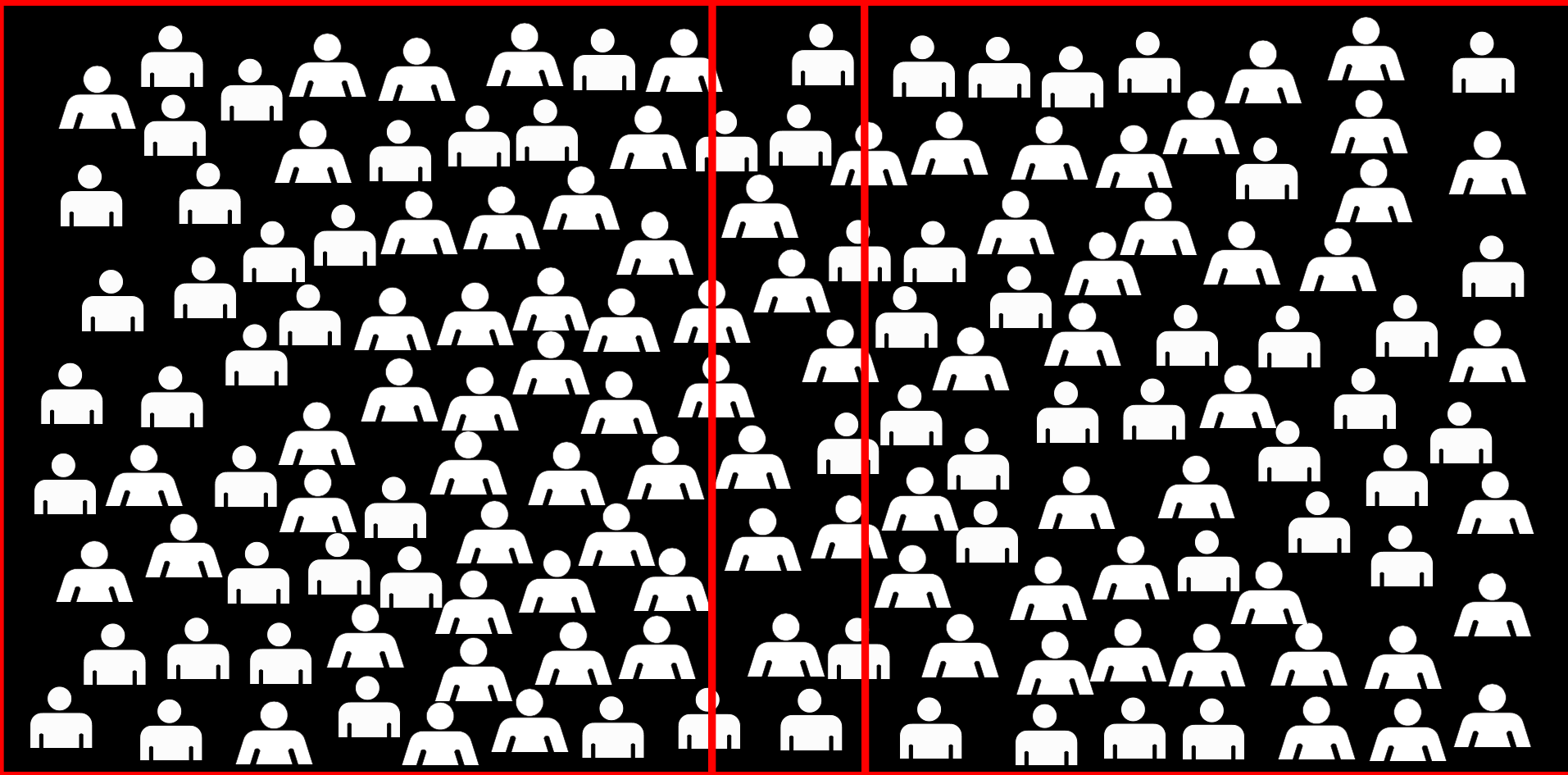
**LAW OF
LAND
ACQUISITION
AND
COMPENSATION**

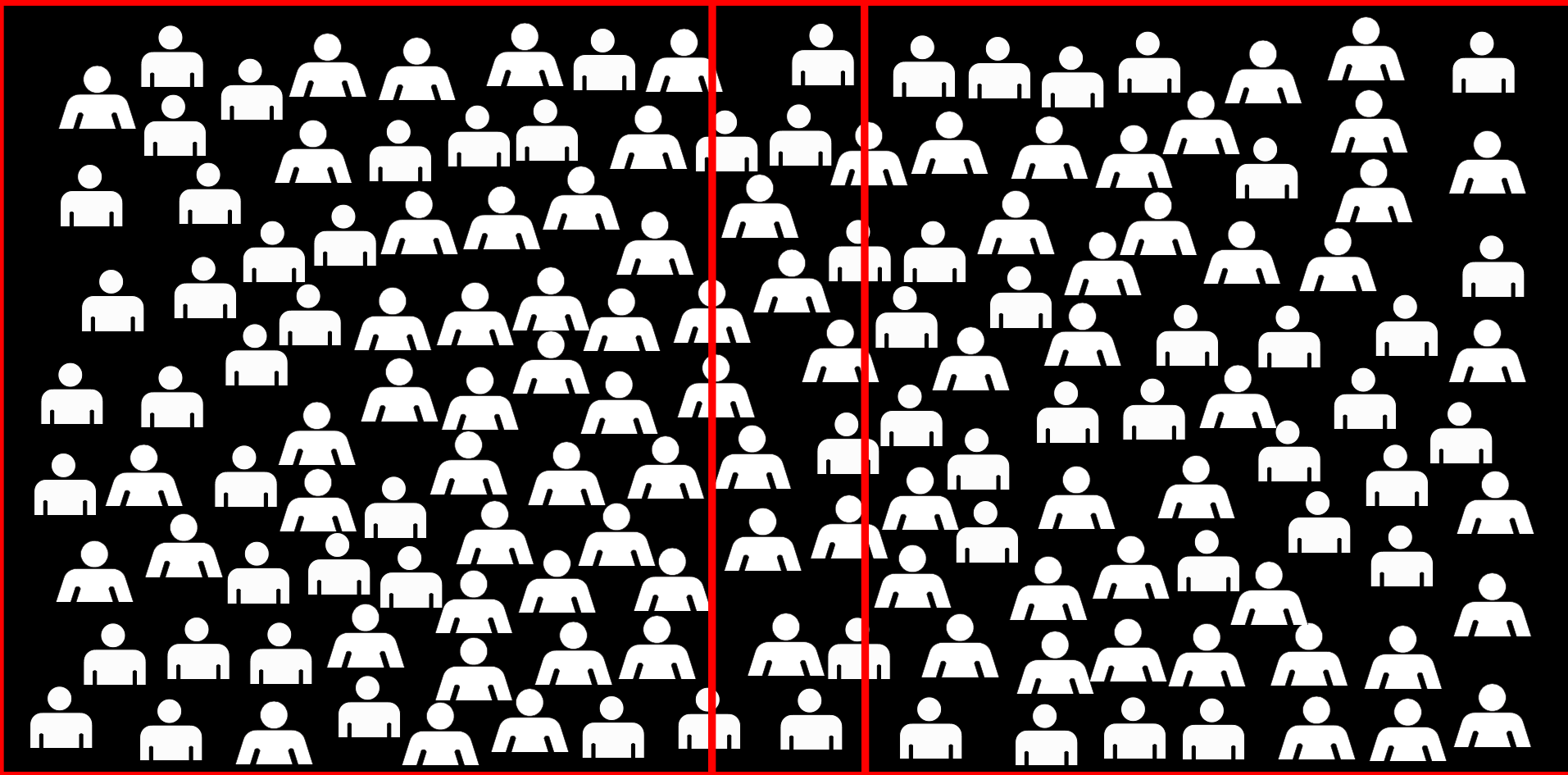


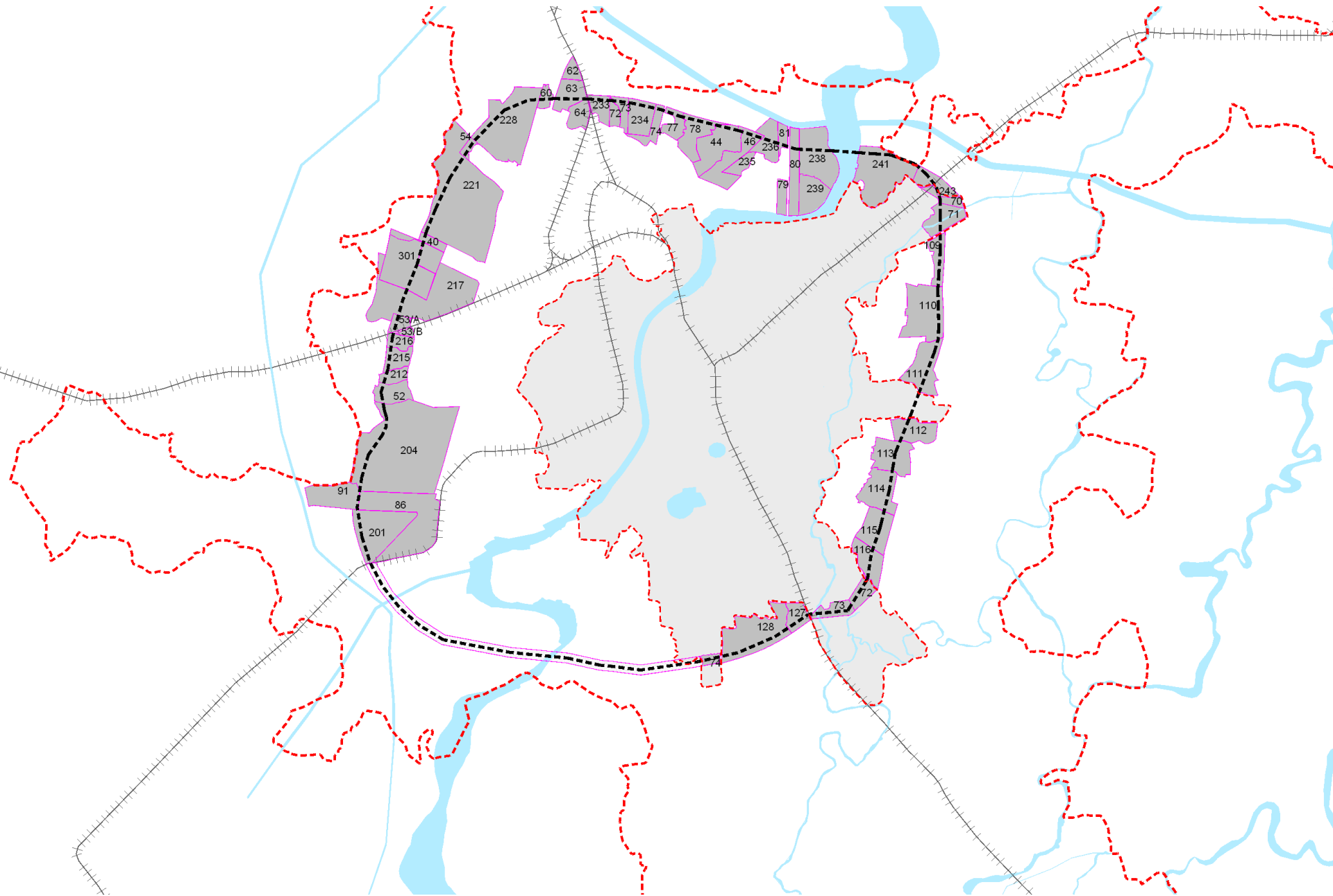
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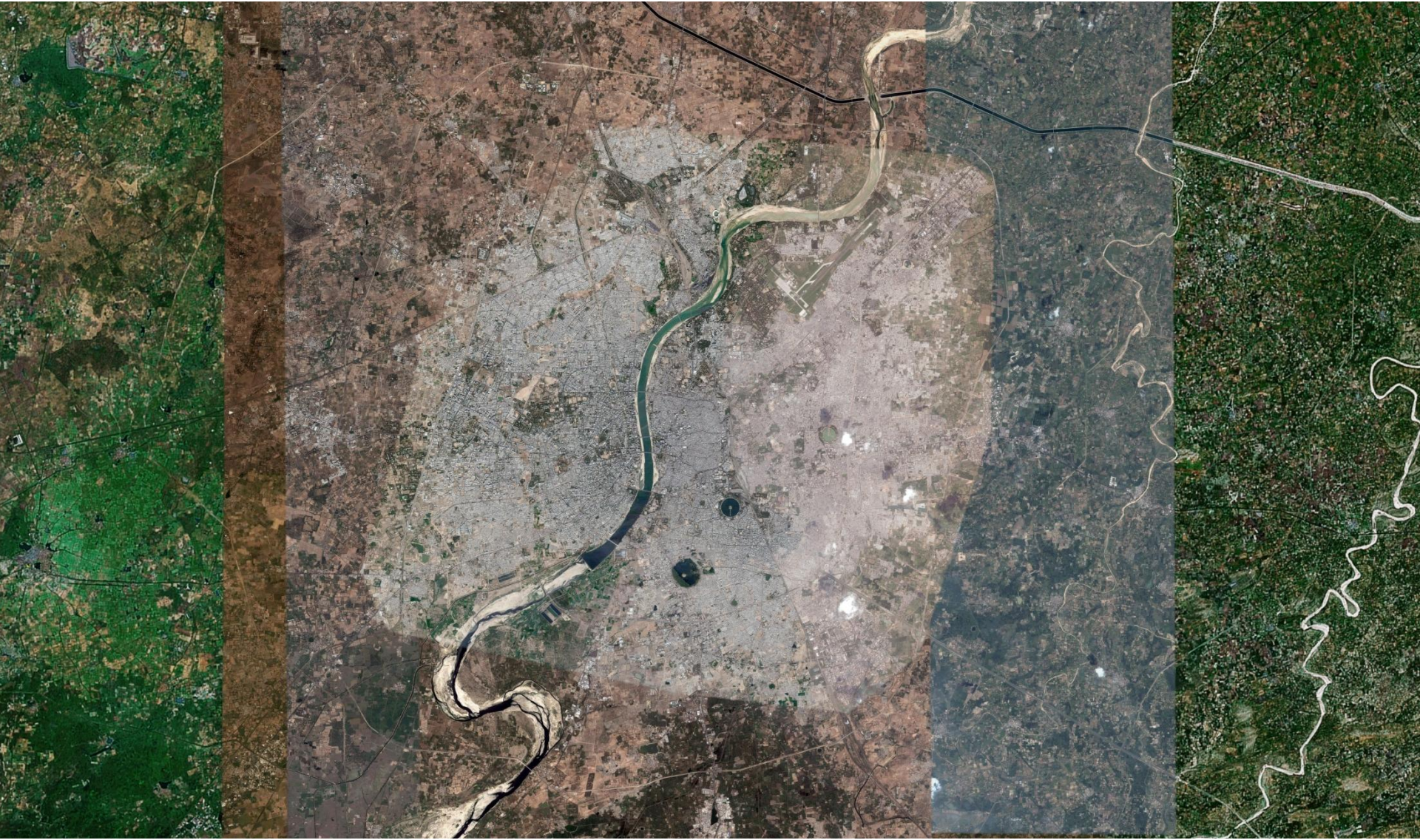
















Think of how you are distributing costs and benefits...

4. When does it make sense for government to be involved?







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FLIGHT MINIATURES.





AIR INDIA



INDIAN AIRLINES



JET AIRWAYS



JETLITE



INDIGO AIRLINES



SPICE JET



DECCAN



KINGFISHER AIRLINES



GO AIR

Think of what government should provide/regulate strictly and what it should leave to the market/regulate lightly.....



5. What should we do now and what should we leave for later?

Contents

- 1 Introduction**
- 2 Approach and Methodology**
- 3 Base Map**
- 4 Demography**
- 5 Land Development**
- 6 Road Network and Transportation**
- 7 Economy**
- 8 Water Supply**
- 9 Sewerage and Storm Water Drainage**
- 10 Solid Waste Management**
- 11 Health**
- 12 Education**
- 13 Public Amenities**
- 14 Heritage and Tourism**
- 15 Environment**
- 16 Vulnerability to Natural and Manmade Hazards/ Disasters**
- 17 Consultations**
- 18 Issues and Challenges**

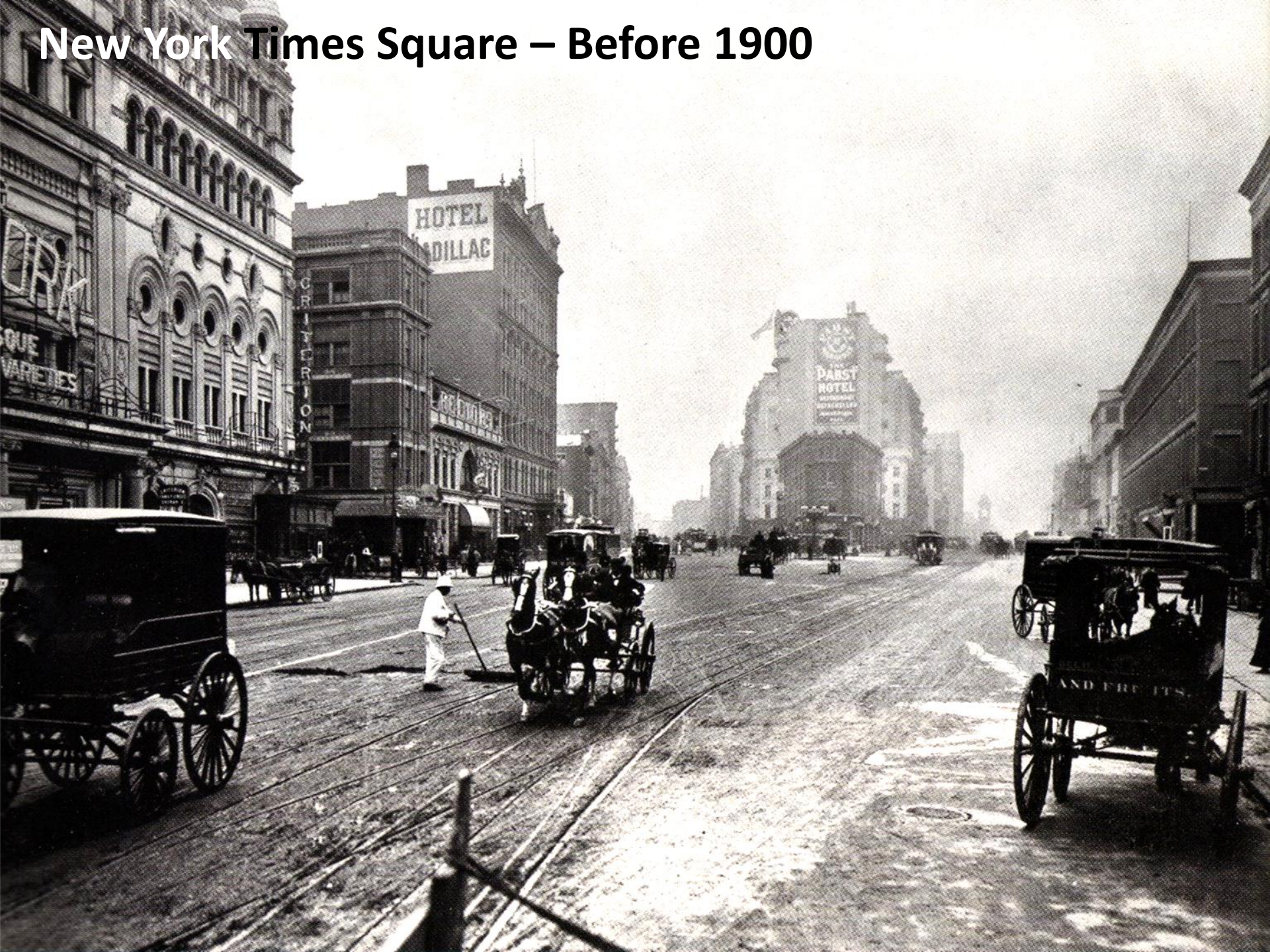
New York



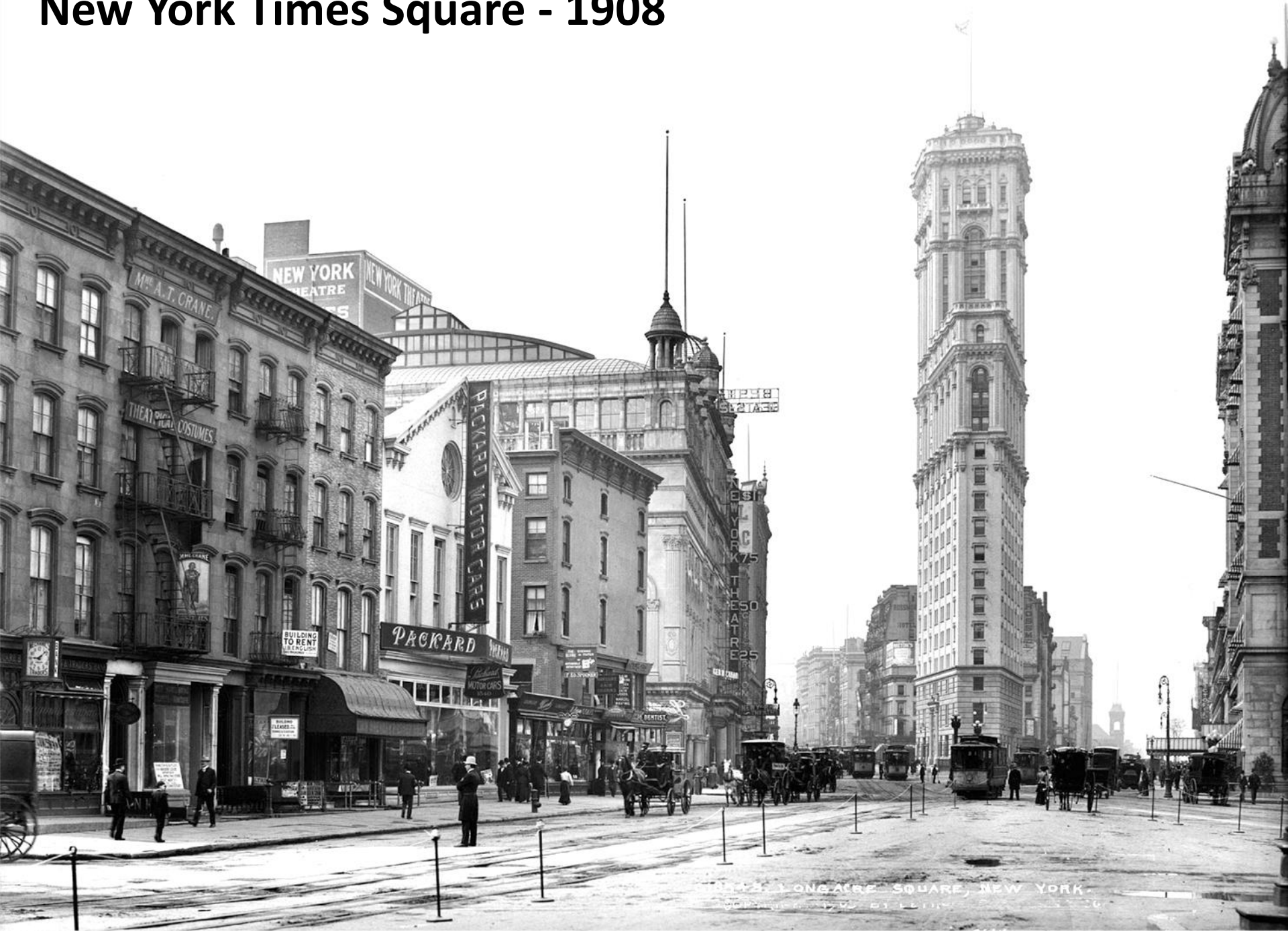




New York Times Square – Before 1900



New York Times Square - 1908



1012 LONG ACRE SQUARE, NEW YORK
COPYRIGHT 1908 BY LEVIN

New York Times Square - 1964



screen!

WARD BROOKS
Release

Scripto

WORLDWIDE

THE WORLD'S
PREMIER
ENTERTAINMENT
MAGAZINE

PINE

THE BIBLE
THE BIBLE
THE BIBLE

The DINO DE LAURENTIIS Production
in one magnificent film
directed by
JOHN HUSTON

THE CREATION - ADAM AND EVE - CAIN AND ABEL
MOSES'S BURNING BUSH - TOWER OF BABEL - ABRAHAM

Screen Play by Christopher Fry

THE BIBLE

BAKER STREET M-G

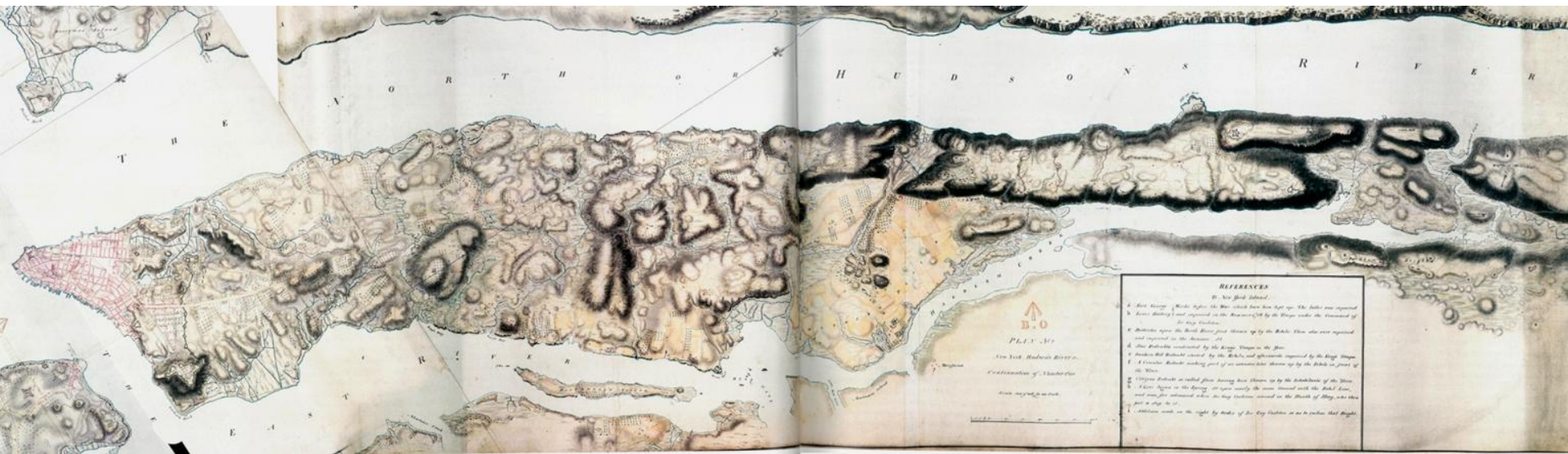
THE BIGGEST HIT ON BROADWAY

SEAN CONNERY
OR NO
FROM RUSSIA WITH LOVE

BENEFICT

New York Times Square - Now





N O R T H O N E H U D S O N S R I V E R E N

B.O.
 P.L.S. 37

New York Hudson River

Continuation of Chamberlayne

Scale 1/100,000

REFERENCES
 1. See Sheet 1000
 2. See Sheet 1000
 3. See Sheet 1000
 4. See Sheet 1000
 5. See Sheet 1000
 6. See Sheet 1000
 7. See Sheet 1000
 8. See Sheet 1000
 9. See Sheet 1000
 10. See Sheet 1000

City of New York

ISLAND of MANHATTAN

Commissioners appointed by the Legislature

to lay out and improve the City of New York

in the year 1811

By the Hon. John W. Aldrich, Mayor

of the City of New York

Printed by W. Woodcut

1811

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Table with 2 columns: Street Name, Width. Lists streets from West Street to East River.

Remarks.

Scale of One Mile
1811

The Commissioners again by an act passed in the 10th year of the said Majesty King George the Fourth...
1811

Printed by W. Woodcut

THIS MAP OF THE
City of New-York
and
ISLAND of MANHATTAN

as laid out to the
Commissionsers appointed by the Legislature

(April 23 1787) as *proprietarily* *incorporated* to the
Mayor Aldermen and Commonalty thereof

By their most Obedient Services
Wm. Bredley

References

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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Well Gate
Part
Long Island

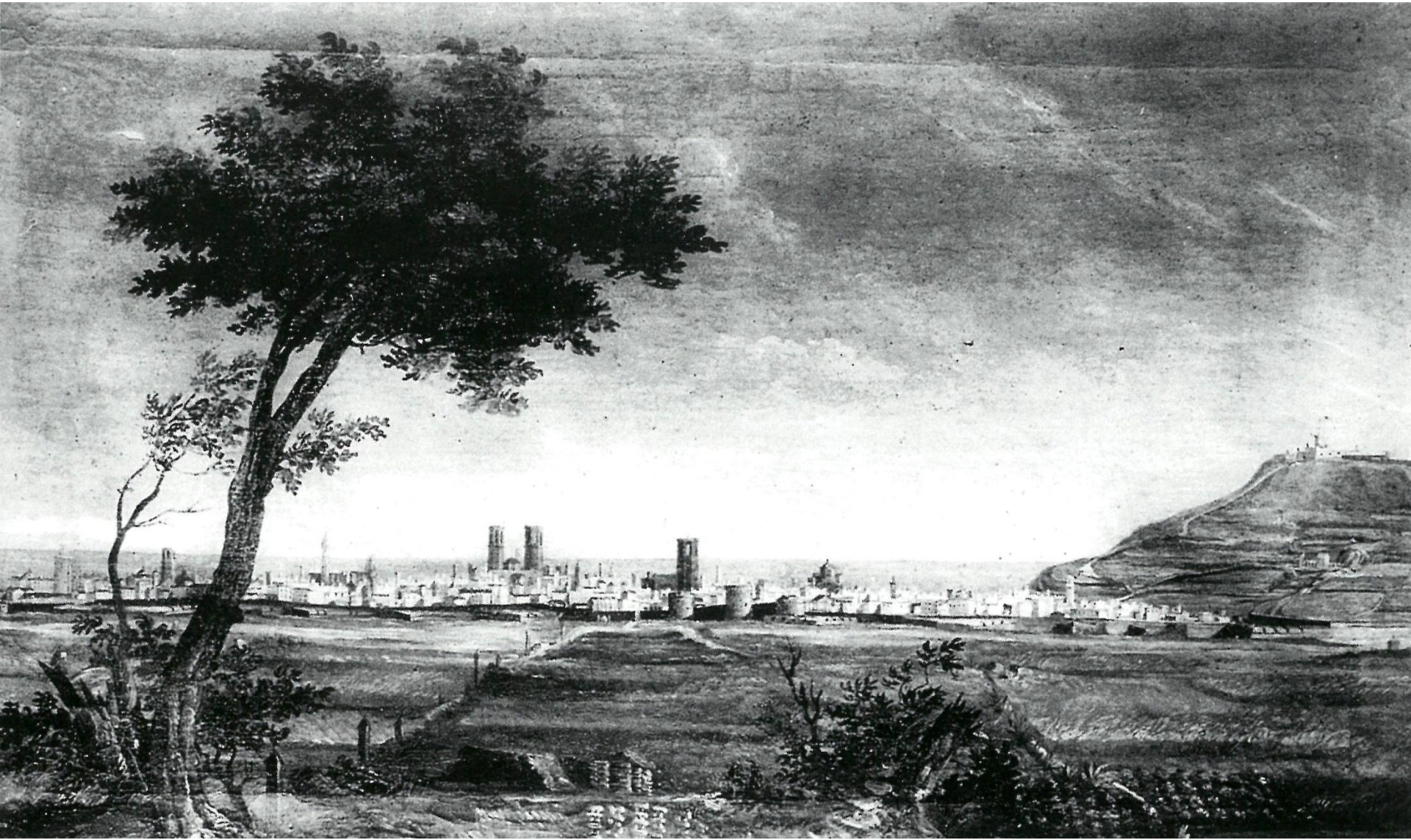
Barcelona

Barcelona: Old city and surrounding farmland, 1860



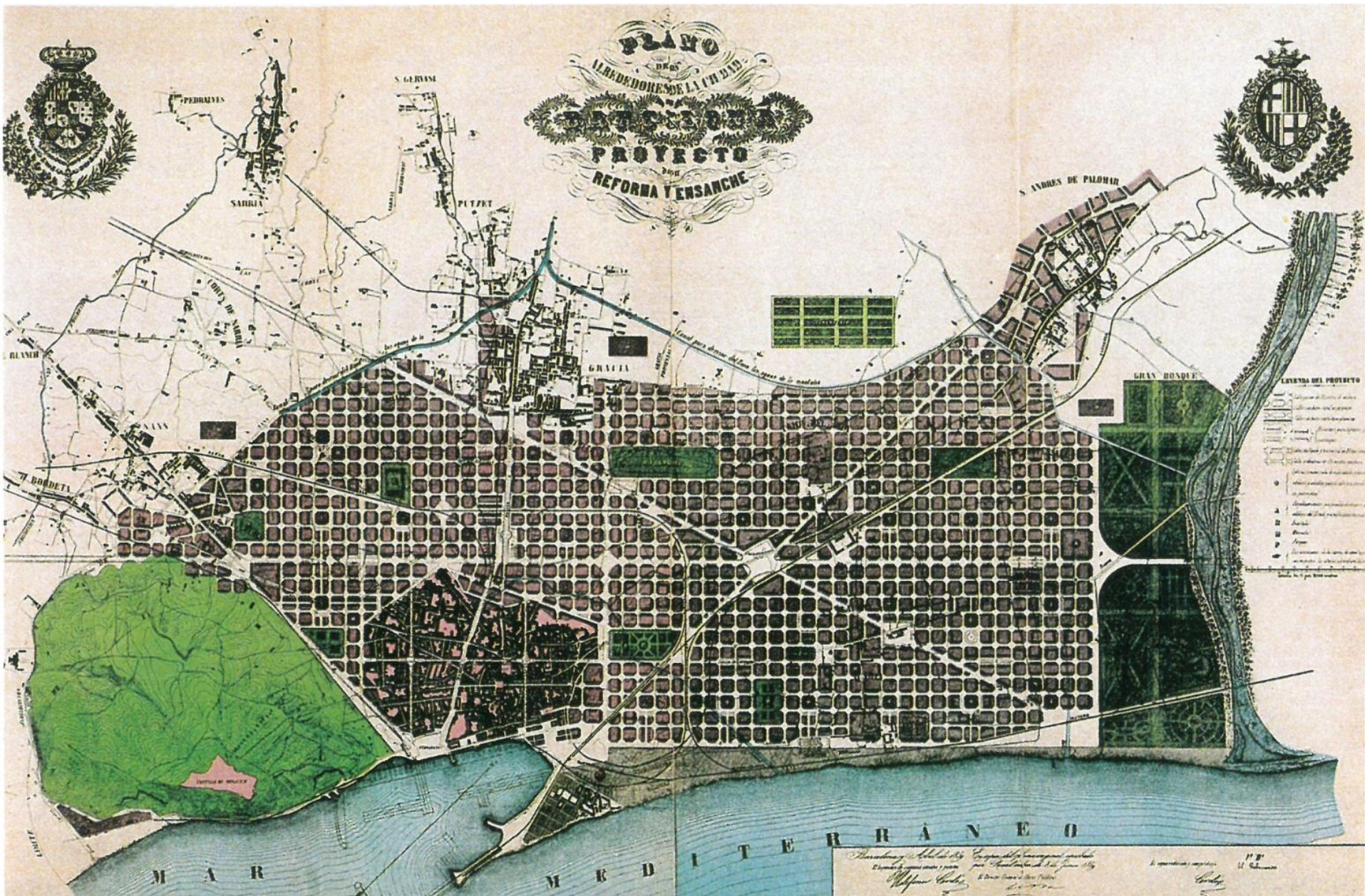
Geometric plan of the jurisdictional municipality of Barcelona, 1860, showing the fragmentation of farmland on which the Eixample was to be built

Barcelona Walled Town, View from the Farmland, 19th Century



View of the walled town at the start of the 19th century

The Eixample Project for Barcelona by Idelfons Cerda, passed in 1959



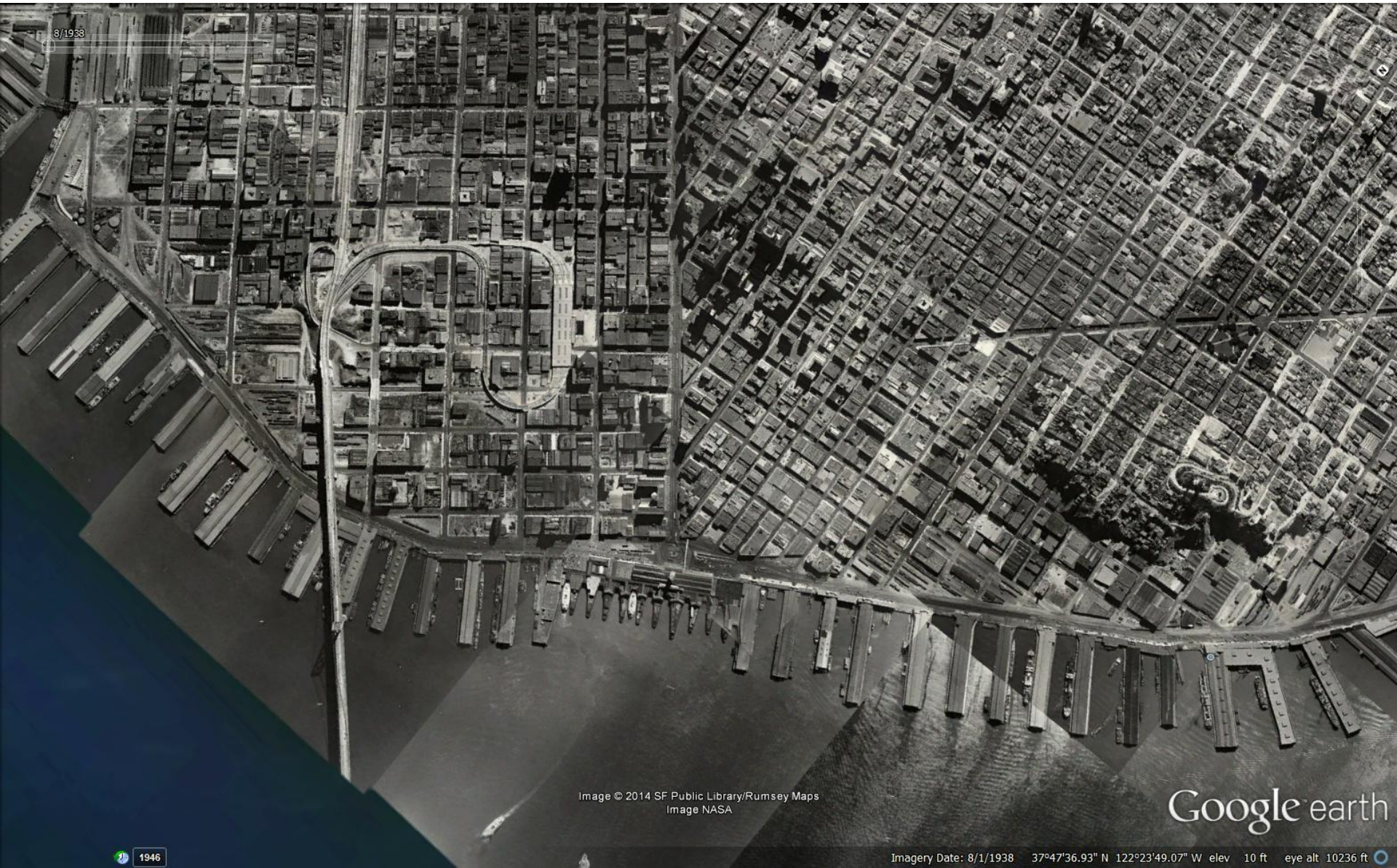
Map of the Eixample Project for Barcelona by Idelfons Cerda, passed in 1859

Barcelona, 2000



San Francisco

San Francisco - 1939



8/1938

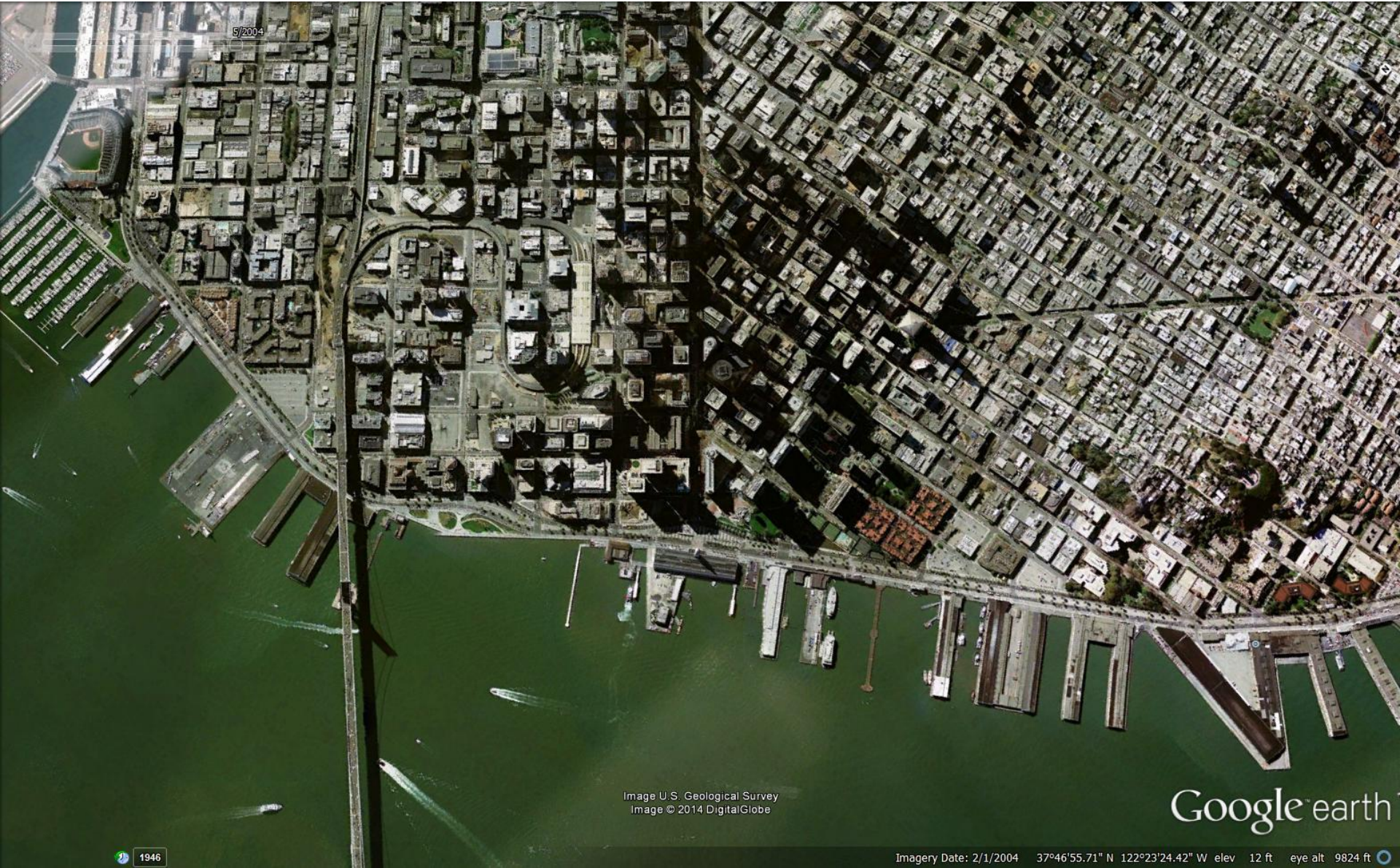
Image © 2014 SF Public Library/Rumsey Maps
Image NASA

Google earth

1946

Imagery Date: 8/1/1938 37°47'36.93" N 122°23'49.07" W elev 10 ft eye alt 10236 ft

San Francisco - 2004



5/2004

Image U.S. Geological Survey
Image © 2014 DigitalGlobe

Google earth

1946

Imagery Date: 2/1/2004 37°46'55.71" N 122°23'24.42" W elev 12 ft eye alt 9824 ft

Leave something for the next generation to do!

“God save us from people who mean well.”

Vikram Seth, A Suitable Boy

Thank you