INTEGRATED COMPREHENSIVE MOBILITY PLAN FOR SUSTAINABLE BHUBANESWAR

AUGUST-20, 2013

INTEGRATED COMPREHENSIVE MOBILITY PLAN FOR BHUBANESWAR, CUTTACK AND PURI KONARK

VISION 2030

VISION

TO REGULATE, INCLUSIVELY PLAN AND DEVELOP AN EFFICIENT, EFFECTIVE AND WELL INTEGRATED TRANSPORT SYSTEM, THAT WOULD:

- ENHANCE MOBILITY IN AN ENVIRONMENTALLY ,SOCIALLY SENSITIVE MANNER
- INDUCE MODAL SHIFT IN FAVOUR OF PUBLIC TRANSPORT
- PROVIDE PEDESTRIAN TRANSPORT INFRASTRUCTURE.
- PROVIDE SEAMLESS CONNECTIVITY

GOALS

- **IMPROVE AIR QUALITY**
  - MASS TRANSIT
  - PEDESTRIANISATION
  - “TRIP NOT MADE”
- **REDUCE URBAN SPRAWL**
  - TRANSIT ORIENTED DEVELOPMENT
- **SOCIALLY EQUITABLE**
  - FARES
  - DURATION OF TRAVEL
  - DISTANCE OF TRAVEL

ENHANCE INCLUSIVE GROWTH

BACKGROUND

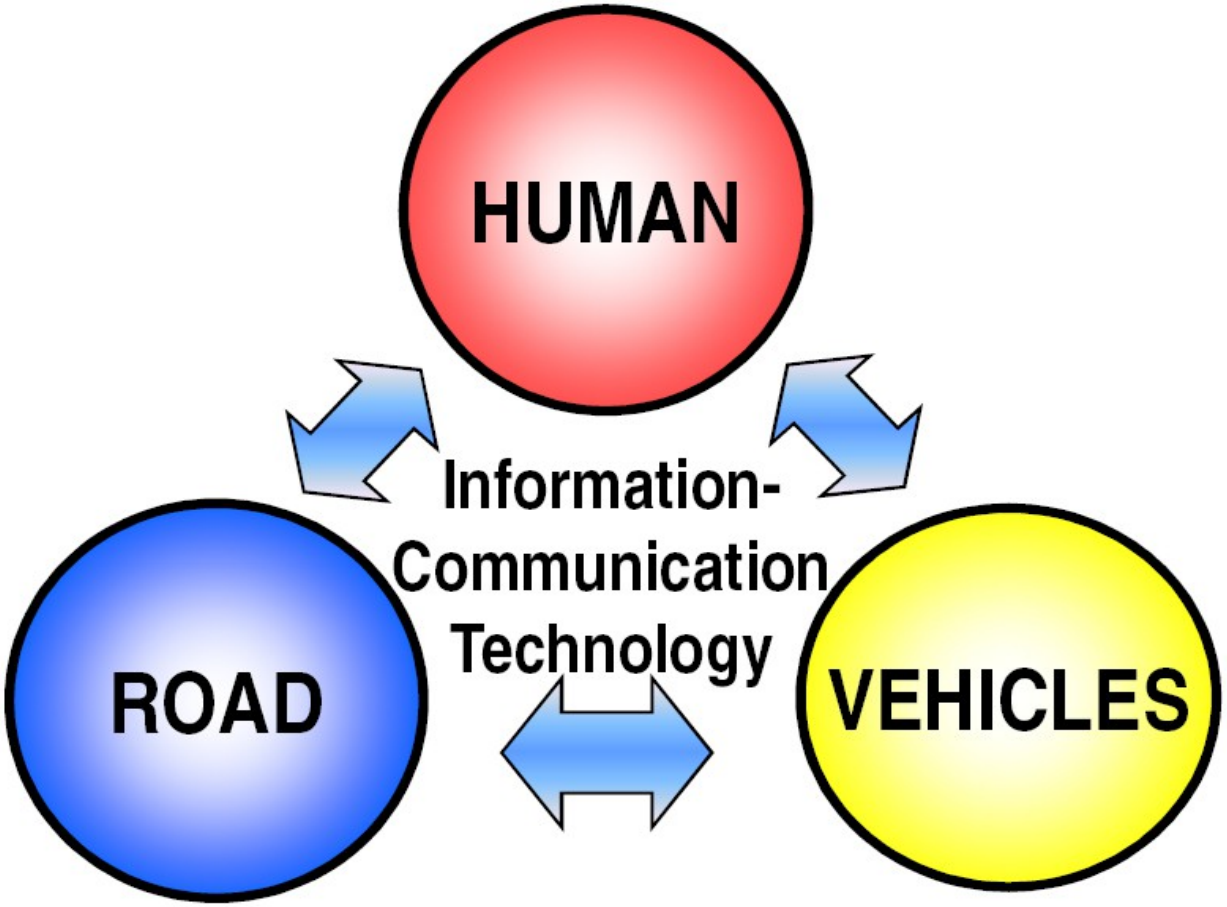
- BHUBANESWAR REPLACED CUTTACK AS THE CAPITAL OF ODISHA IN 1948
- OTTO KONIGSBERGER PLANNED FOR THE NEW CITY OF BHUBANESWAR IN 1946
- METROPOLITAN AREA FORMED BY THE TWIN CITIES - POPULATION OF 1.4 MILLION IN 2011
- BHUBANESWAR IS GROWING IT , EDUCATION & INDUSTRIAL HUB,

WHEREAS CUTTACK ??

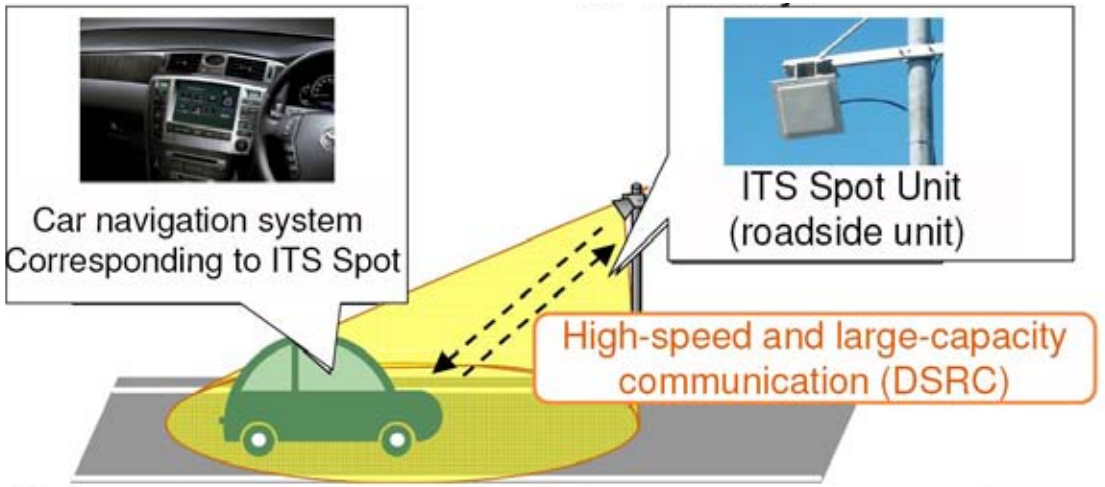
OBJECTIVES

- CONNECT THE TWO CITIES WITH ONE TRANSPORT SYSTEM
- UNIFIED MASS RAPID TRANSIT SYSTEM CORRIDOR
- A COMMON RING ROAD
- RAILWAY STATIONS HSR CORRIDOR
- UNIFIED TICKTING SYSTEM FOR ALL MODES
- INTELLIGENT TRANSPORTATION SYSTEM

INTELLIGENT TRANSPORT SYSTEM



INTELLIGENT TRANSPORT SYSTEM



Caution to notify traffic congestion beyond curve

60% of collisions have been reduced at Sangubashi Curve.

INTELLIGENT TRANSPORT SYSTEM

SOURCE : –
NATIONAL INSTITUTE FOR LAND AND INFRASTRUCTURE MANAGEMENT
MINISTRY OF LAND, INFRASTRUCTURE, TRANSPORT AND TOURISM, JAPAN

INTELLIGENT TRANSPORT SYSTEM

- INTERSECTION CONTROL
- INCIDENT DETECTION
- VEHICLE CLASSIFICATION
- REVENUE COLLECTION
- PROVIDES CONGESTION MAPS
- TRAVEL TIME ESTIMATES
- PUBLIC TRANSPORT INFORMATION
- INDIVIDUAL VEHICLE MANAGEMENT
- ACCIDENT HANDLING

INTELLIGENT TRANSPORT SYSTEM – FOR FREIGHT

INTELLIGENT TRANSPORT SYSTEM – FOR CARS

CAR – NH 5 – BBSR CITY – ROAD PRICING (ITS)
MOTOR CYCLE - CRIME CONTROL

INTELLIGENT TRANSPORT SYSTEM

WEB-BASED TRAFFIC PLAN USING GIS

- DISTRIBUTION OF THE PLAN EASIER, WIDER, AND CHEAPER
- OFFERS BOTH STATIC AND DYNAMIC DIGITAL MAPS
- HELP INDIVIDUALS, KNOWLEDGE ABOUT THE TRAFFIC PLAN
- CITY PLANNER - ACCESS THE TRAFFIC DATA

RECOMMENDATION

- IMPLEMENT - DESIGN BUILT MECHANISM.
- INFORMATION OF THE WEBSITE -THROUGH MEDIA.

INTELLIGENT TRANSPORT SYSTEM

INTELLIGENT TRANSPORT SYSTEM

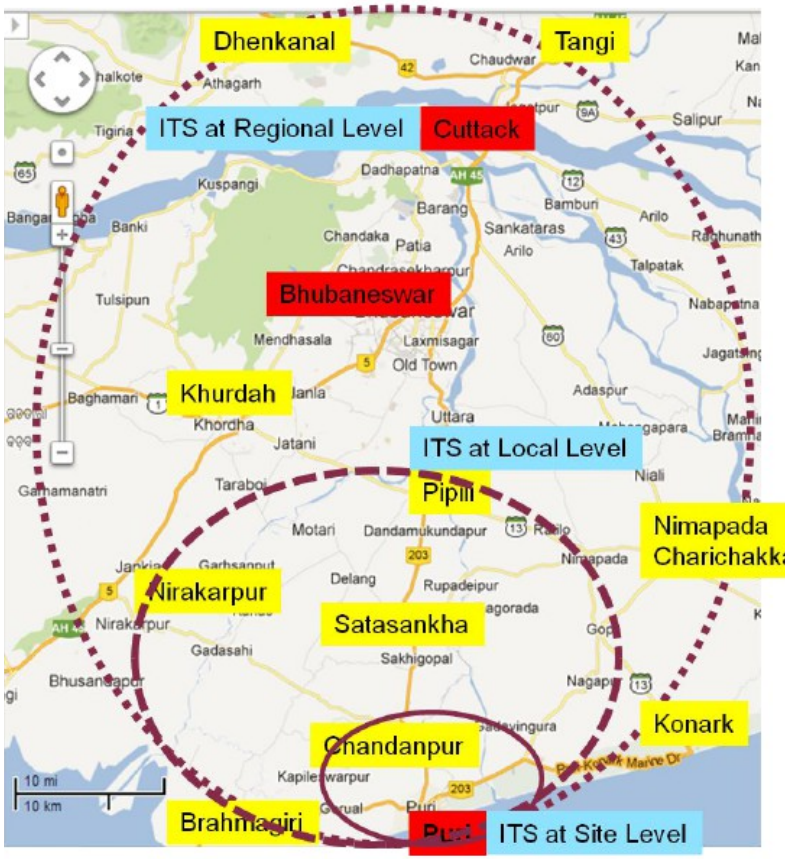
•TRAFFIC ENFORCEMENT CAMERAS

•MOTOR VEHICLE DATA BASE - TOOL TO ENFORCE TRAFFIC LAWS.

•CAMERAS TO CAPTURE - **SPEEDING VIOLATIONS**, **UNAUTHORIZED USE** OF A **BUS LANE**, AND FOR FUTURE **CONGESTION PRICING** SCENARIOS.

•CAMERAS FOR **BUS LANE, RED LIGHT, SPEED LIMIT , STOP SIGN** ENFORCEMENT AND **NUMBER PLATE RECOGNITION** SYSTEM.

•**DESIGN BUILD PROCUREMENT**



INTELLIGENT TRANSPORT SYSTEM – ADVANTAGES

SAFETY - DIRECT TRAFFIC AWAY FROM ACCIDENTS AND ALERT EMERGENCY SERVICES

PRODUCTIVITY - INCREASE THE CAPACITY OF CURRENT INFRASTRUCTURE

ENVIRONMENTAL PERFORMANCE - REDUCE CONGESTION , FUEL CONSUMPTION AND GHG EMISSIONS

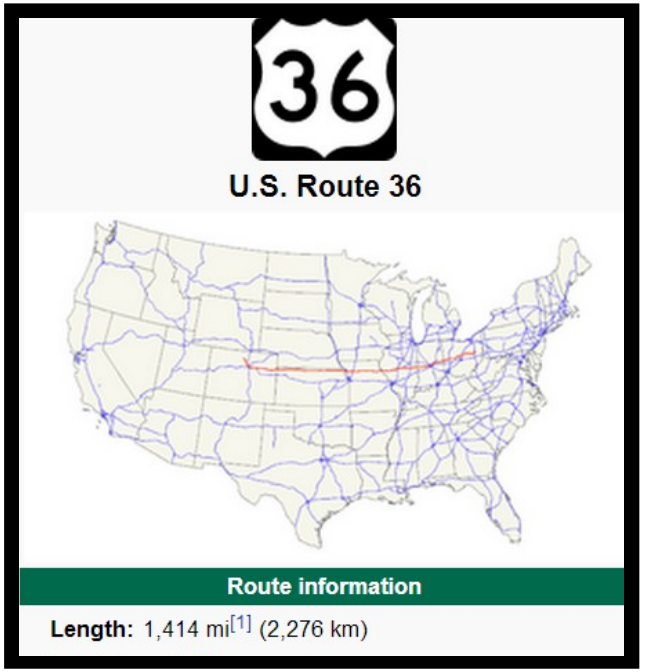
LICENSE PLATE REGISTRATION NUMBER -> OWNERSHIP DETAILS - > PREVENTS CAR THEFT

HIGHWAY DESIGNED TO ENCOURAGE PEOPLE TO DRIVE LESS

Highway Expansion Encourages More Than Just Driving

In Colorado Project, Tolls, Bus Lanes And a Bike Path

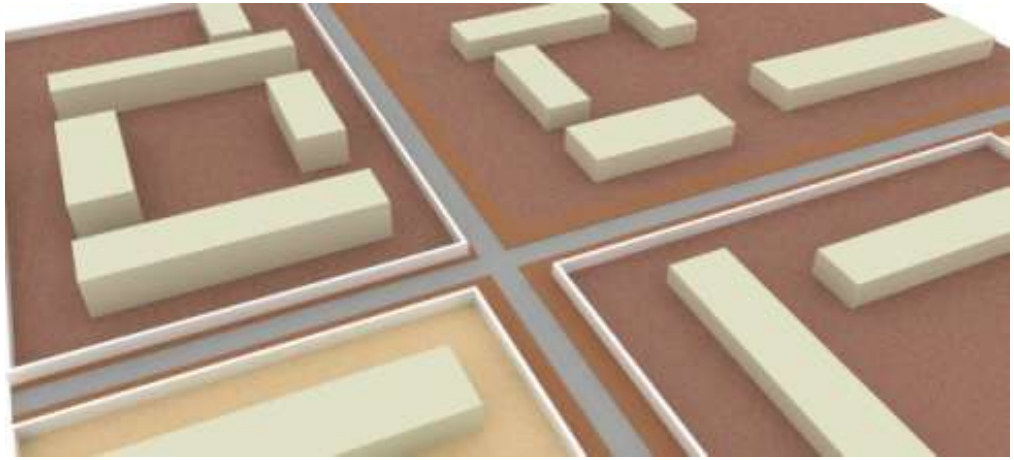
THE NEW YORK TIMES 21.06.2013 PP-A12&A15

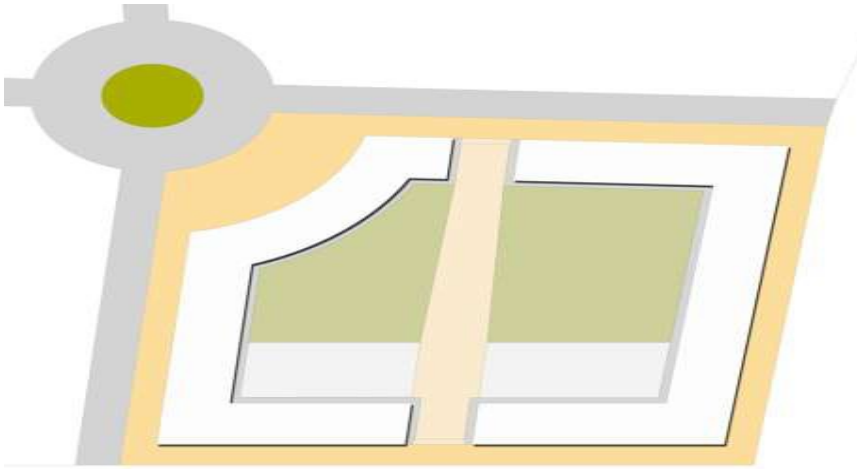


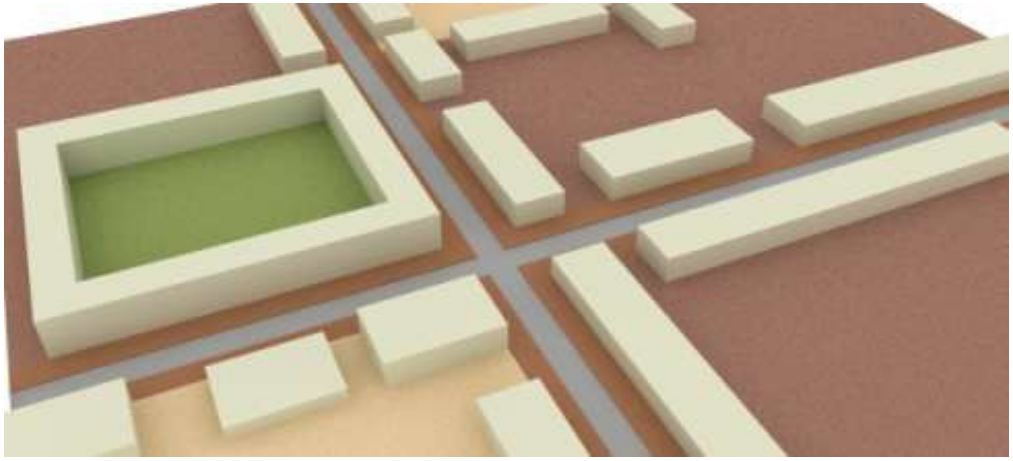
- CONGESTION PRICING
- SPECIAL LANE FOR HOV
- BRTS
- ELECTRONIC TOLL SYSTEM FOR SINGLE –OCCUPANT CARS AND BIKE PATH

PARKING

WRAP AROUND PARKING







PARKING INFORMATION SYSTEM (PIS)

- BRIGADE'S SHOPS AND ESTABLISHMENTS ASSOCIATION – B'LORE
- SMS
- 3 DISPLAY BOARDS

ELECTRONIC PARKING SYSTEM

ELECTRONIC PARKING IN BANGALORE AND CHENNAI
(PHONE BASE AND CREDIT CARD PAY SYSTEM)

ALTERNATE SIDE PARKING

REVENUE COLLECTION

REVENUE COLLECTION FROM ITS

WB GOVT. COLLECTS RS 17 CR. FROM " TRAFFIC FINES " IN KOLKATA

REVENUE COLLECTION FROM PARKING

ELECTRONIC PARKING SYSTEM – B'LORE – 100 SLOTS – RS 1.01 + CR. BETWEEN 2004-2009

COST - RS.36 LAKHS IN 2004

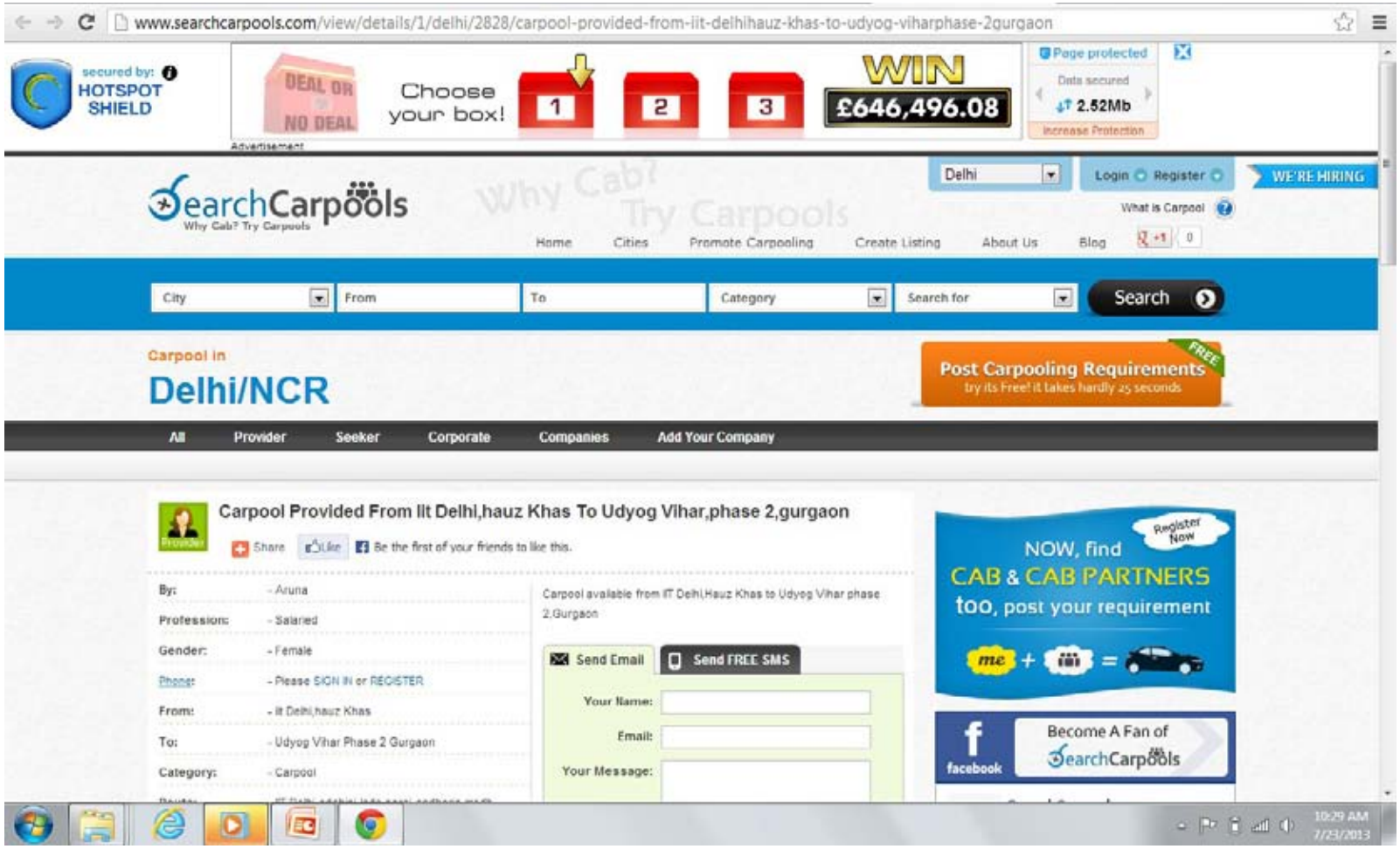
PARKING FEE IN 2004 - RS 10 / HR – MAX 2 HRS

CITY BIKE SHARING PROGRAM

POLLUTION CONTROL MEASURES BY REGULAR MONITORING OF VEHICLES

- BHARAT II BUSES - OFF ROAD
- MONITORED ALL VEHICLE EMISSIONS RANDOM CHECKING
- STRICTLY MONITOR ISSUE AND RENEWAL OF LICENSE

CARPOOLING


www.searchcarpools.com/view/details/1/delhi/2828/carpool-provided-from-iit-delhihauz-khas-to-udyog-viharphase-2gurgaon
secured by: HOTSPOT SHIELD
DEAL OR NO DEAL
Choose your box!
1
2
3
WIN
£646,496.08
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Data secured
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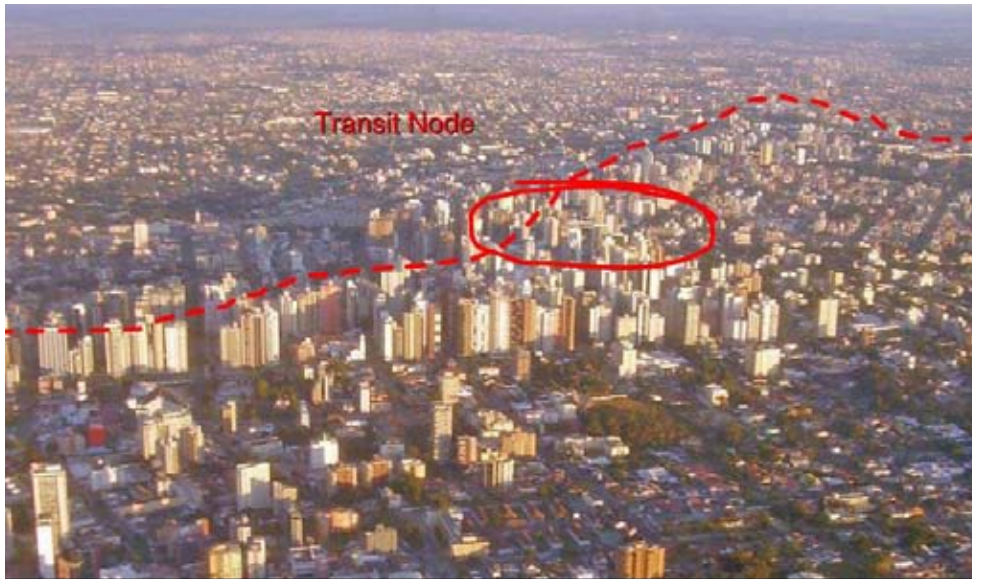
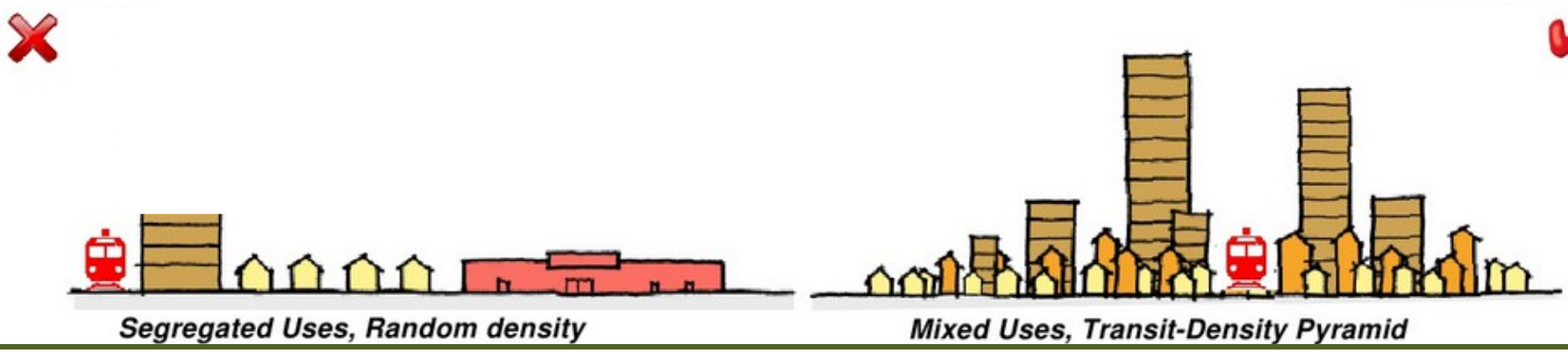
Delhi
Login
Register
WE'RE HIRING
What is Carpool
Home
Cities
Promote Carpooling
Create Listing
About Us
Blog
City
From
To
Category
Search for
Search
Carpool in
Delhi/NCR
Post Carpooling Requirements
try its Free! it takes hardly 25 seconds
FREE
All
Provider
Seeker
Corporate
Companies
Add Your Company
Carpool Provided From Iit Delhi,hauz Khas To Udyog Vihar,phase 2,gurgaon
Share
Like
Be the first of your friends to like this.
By: - Aruna
Profession: - Salaried
Gender: - Female
Phone: - Please SIGN IN or REGISTER
From: - Iit Delhi,hauz Khas
To: - Udyog Vihar Phase 2 Gurgaon
Category: - Carpool
Carpool available from IIT Delhi,Hauz Khas to Udyog Vihar phase 2,Gurgaon
Send Email
Send FREE SMS
Your Name:
Email:
Your Message:
Register Now
NOW, find
CAB & CAB PARTNERS
too, post your requirement
facebook
Become A Fan of
SearchCarpools

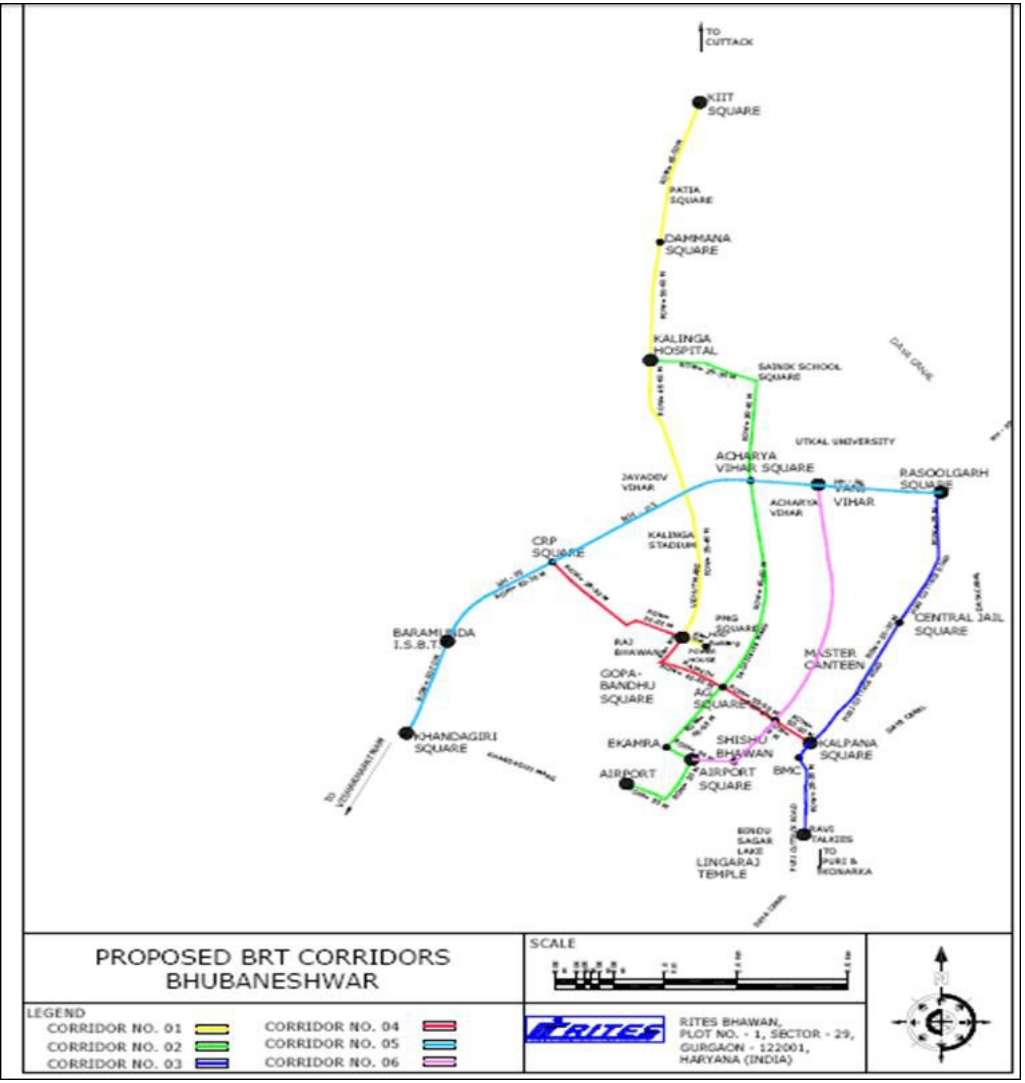
TRANSIT ORIENTED DEVELOPMENT

SMART GROWTH - COMPACT CENTERS WITH ACCESS TO PUBLIC TRANSIT.





TRANSIT ORIENTED DEVELOPMENT



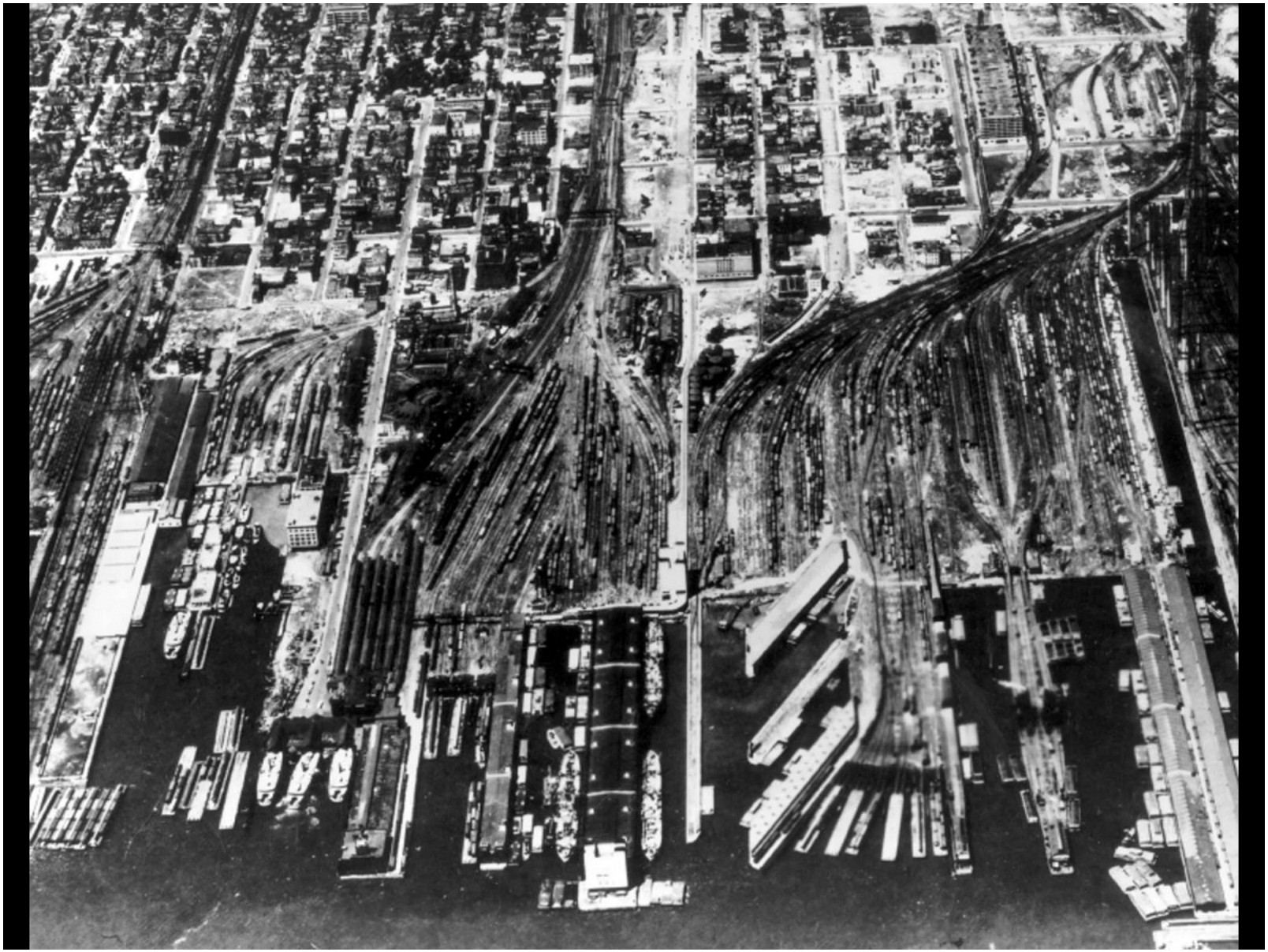
MRTS CORRIDOR TO BE IDENTIFIED BRTS SHOULD COMPLIMENT MRTS

- 'NO CONSTRUCTION ZONE' TILL MRTS ALIGNMENT IS FIXED

- TOD AROUND MRTS NODES

Jersey City

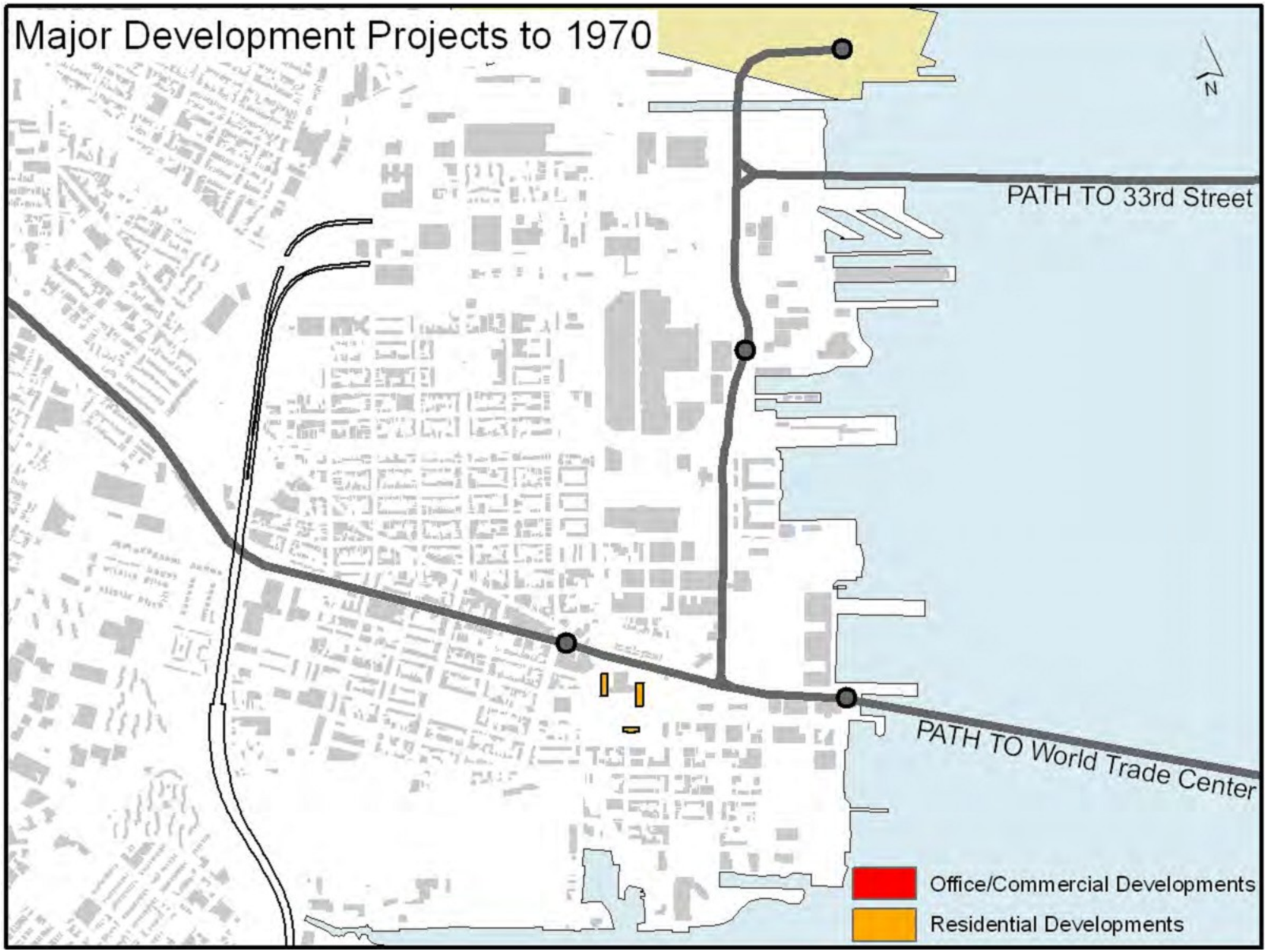
Redevelopment in the Shadow

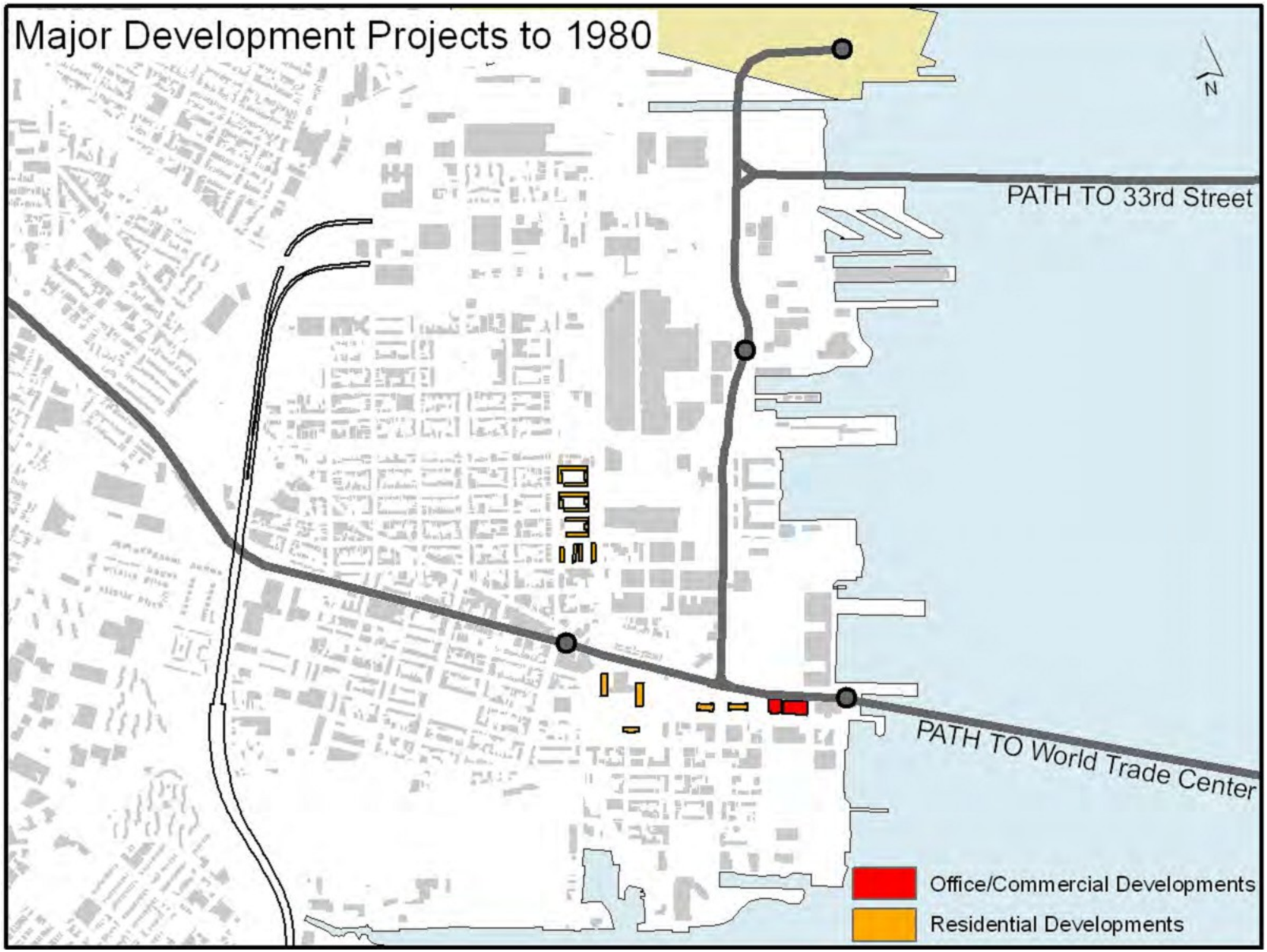


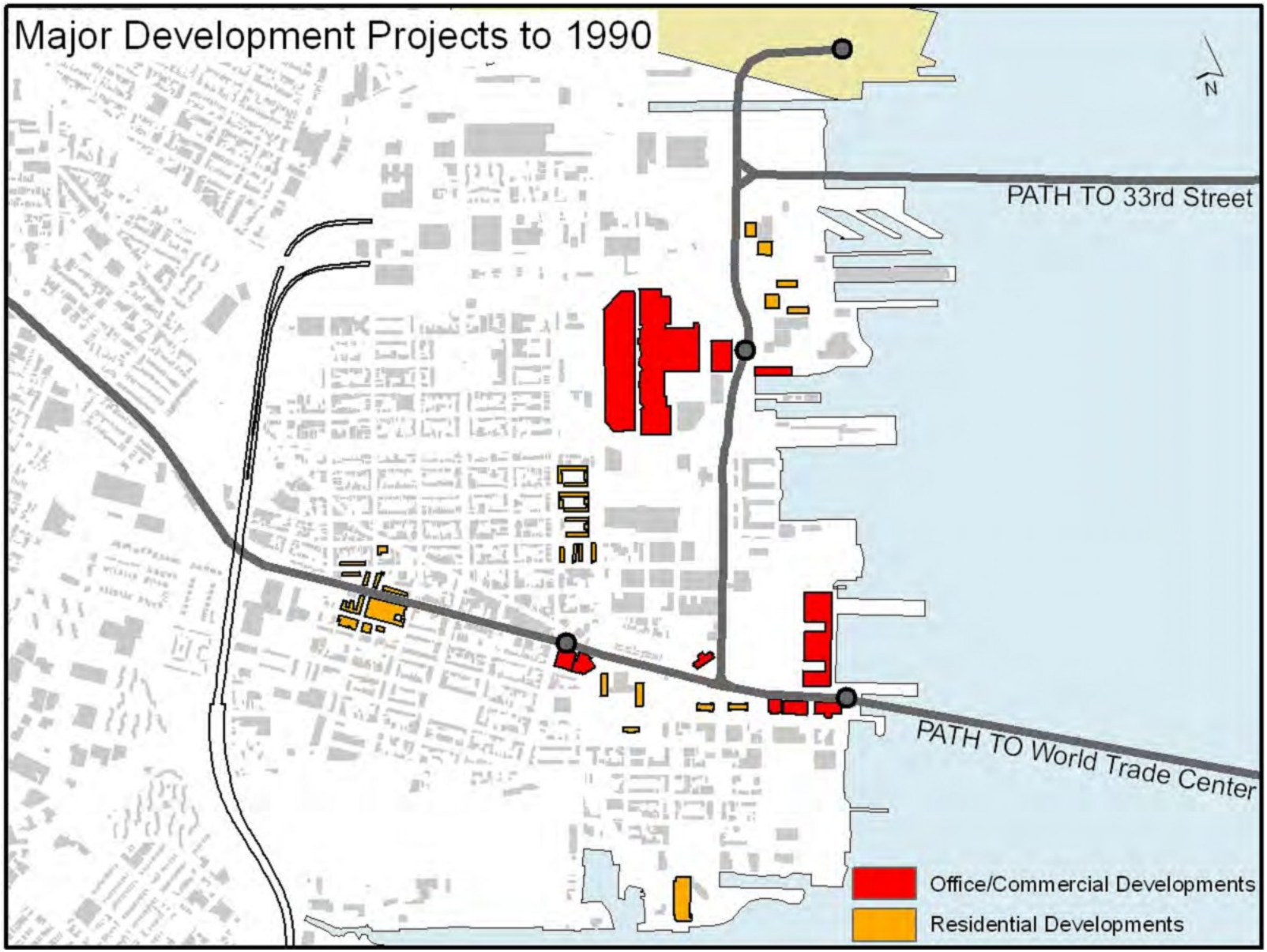

Hudson River
waterfront
WALKWAY
NJ Coastal Zone Management Program
Funded by NOAA CZM Grant No. NA60Z0459
HRWC

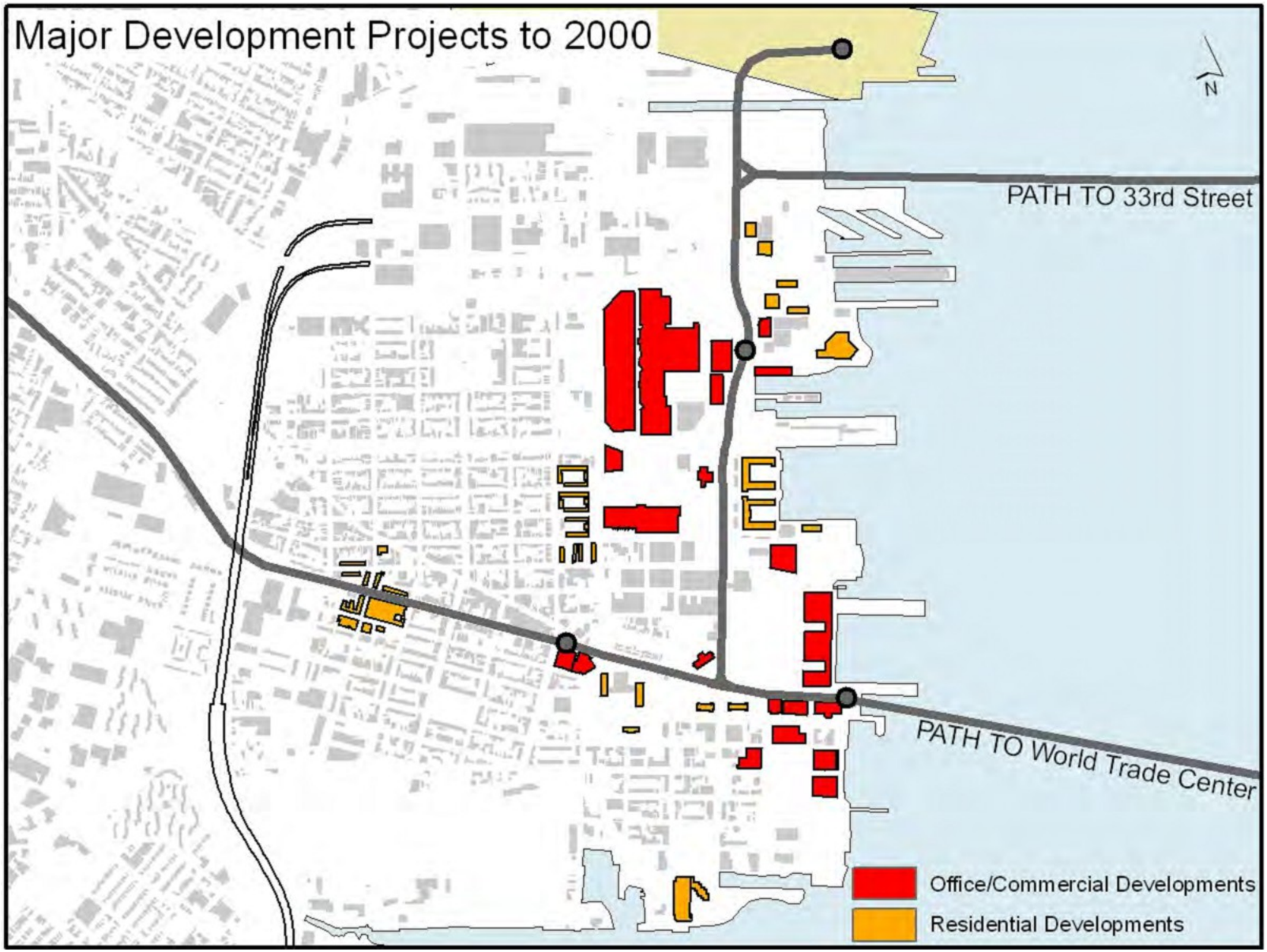

NJTRANSIT
2020A
NJTRANSIT
NJTRANSIT

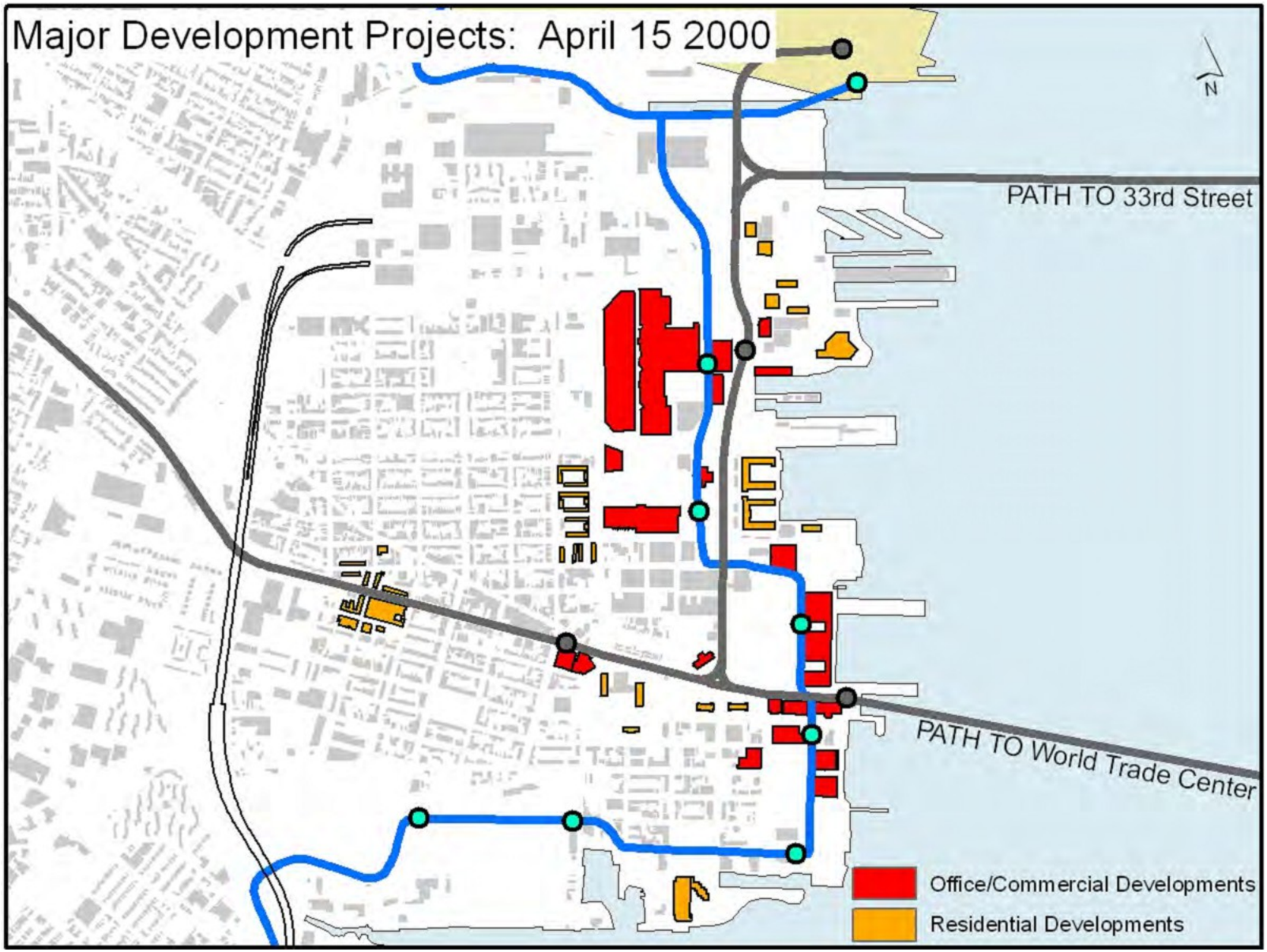

DO NOT
ENTER
014 RV
NJ TRANSIT
2012A
NJ TRANSIT

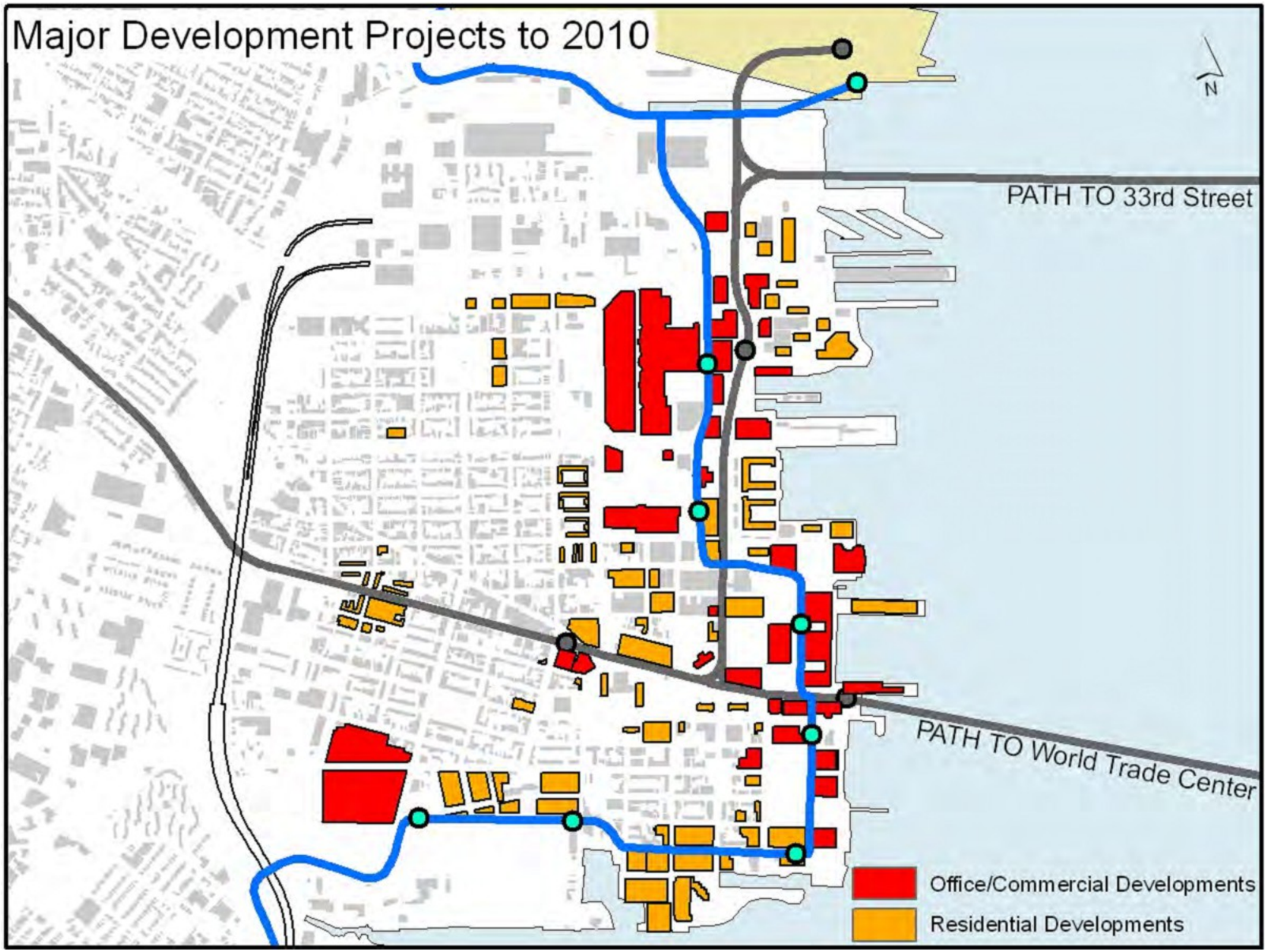

Major Development Projects to 1970
N
PATH TO 33rd Street
PATH TO World Trade Center
Office/Commercial Developments
Residential Developments

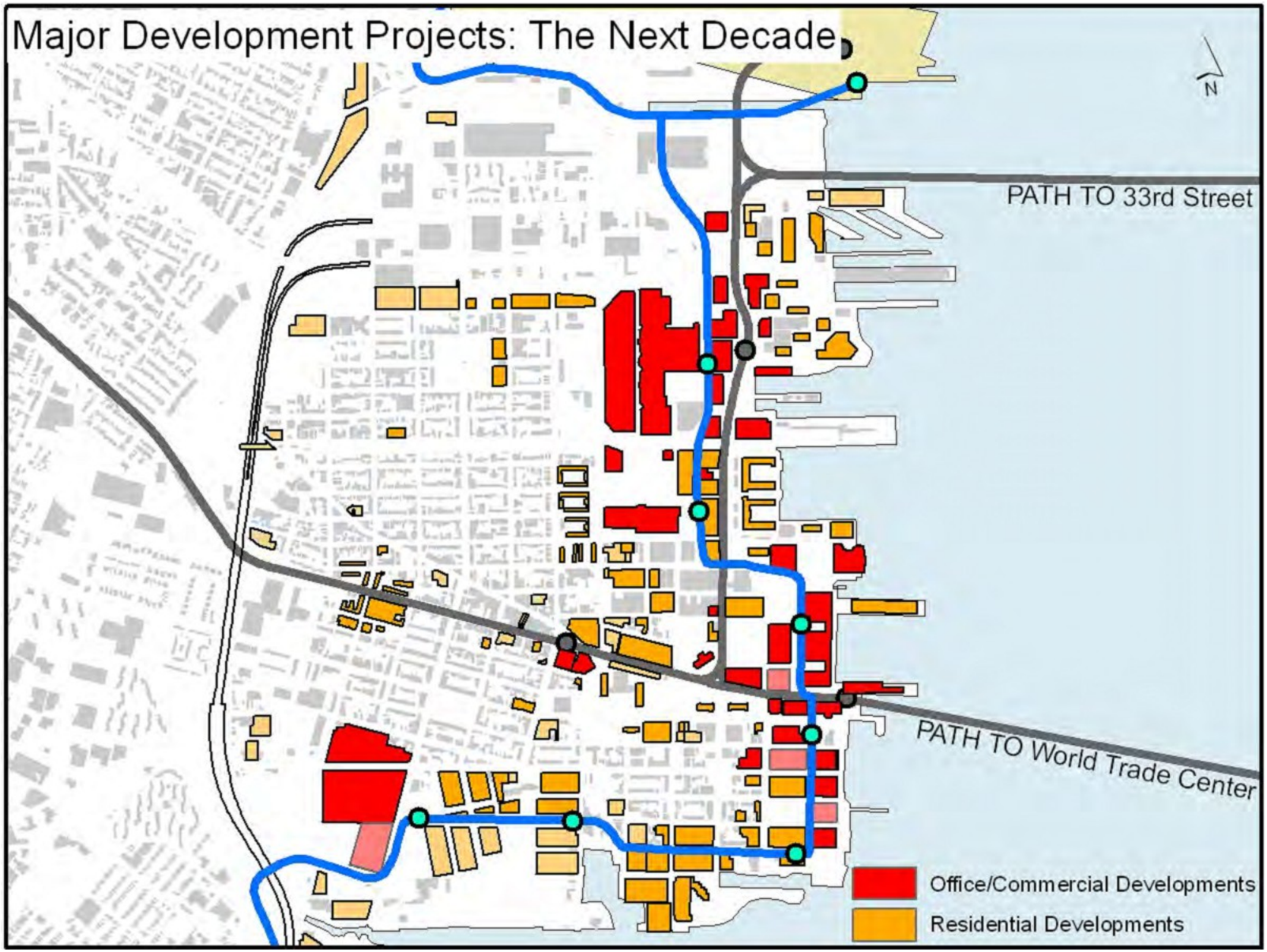

Major Development Projects to 1980
N
PATH TO 33rd Street
PATH TO World Trade Center
Office/Commercial Developments
Residential Developments


Major Development Projects to 1990
N
PATH TO 33rd Street
PATH TO World Trade Center
Office/Commercial Developments
Residential Developments

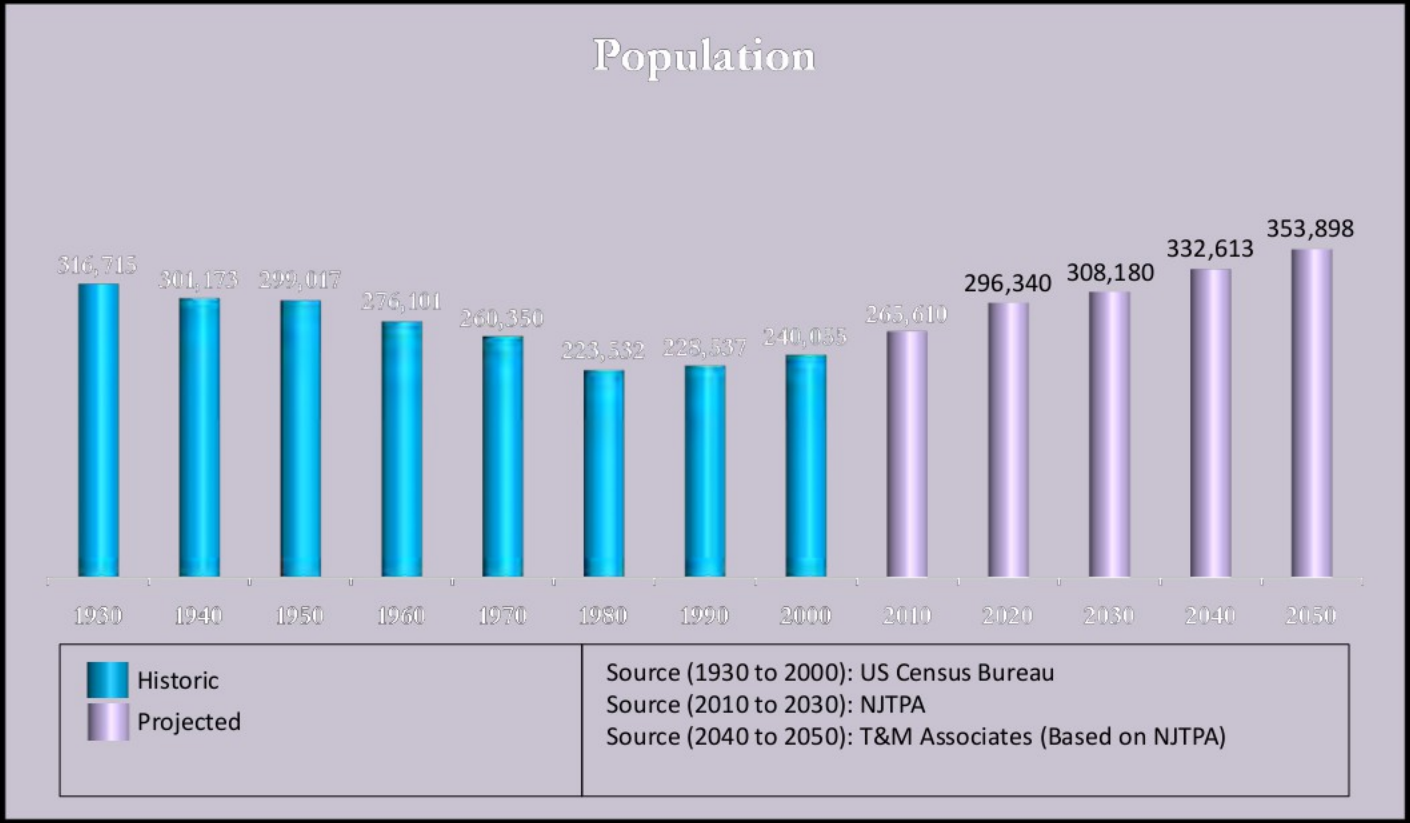

Major Development Projects to 2000
N
PATH TO 33rd Street
PATH TO World Trade Center
Office/Commercial Developments
Residential Developments

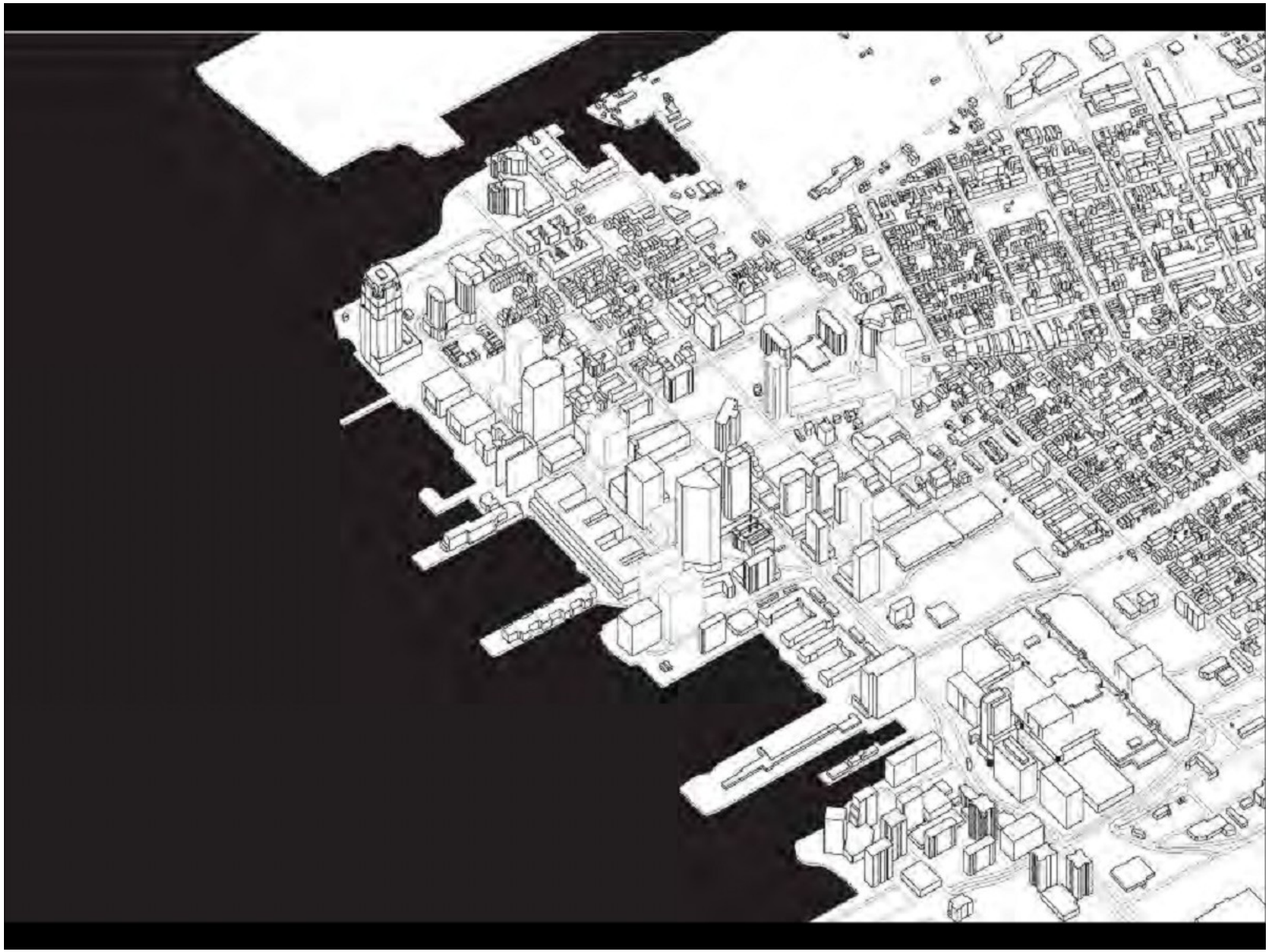

Major Development Projects: April 15 2000
N
PATH TO 33rd Street
PATH TO World Trade Center
Office/Commercial Developments
Residential Developments

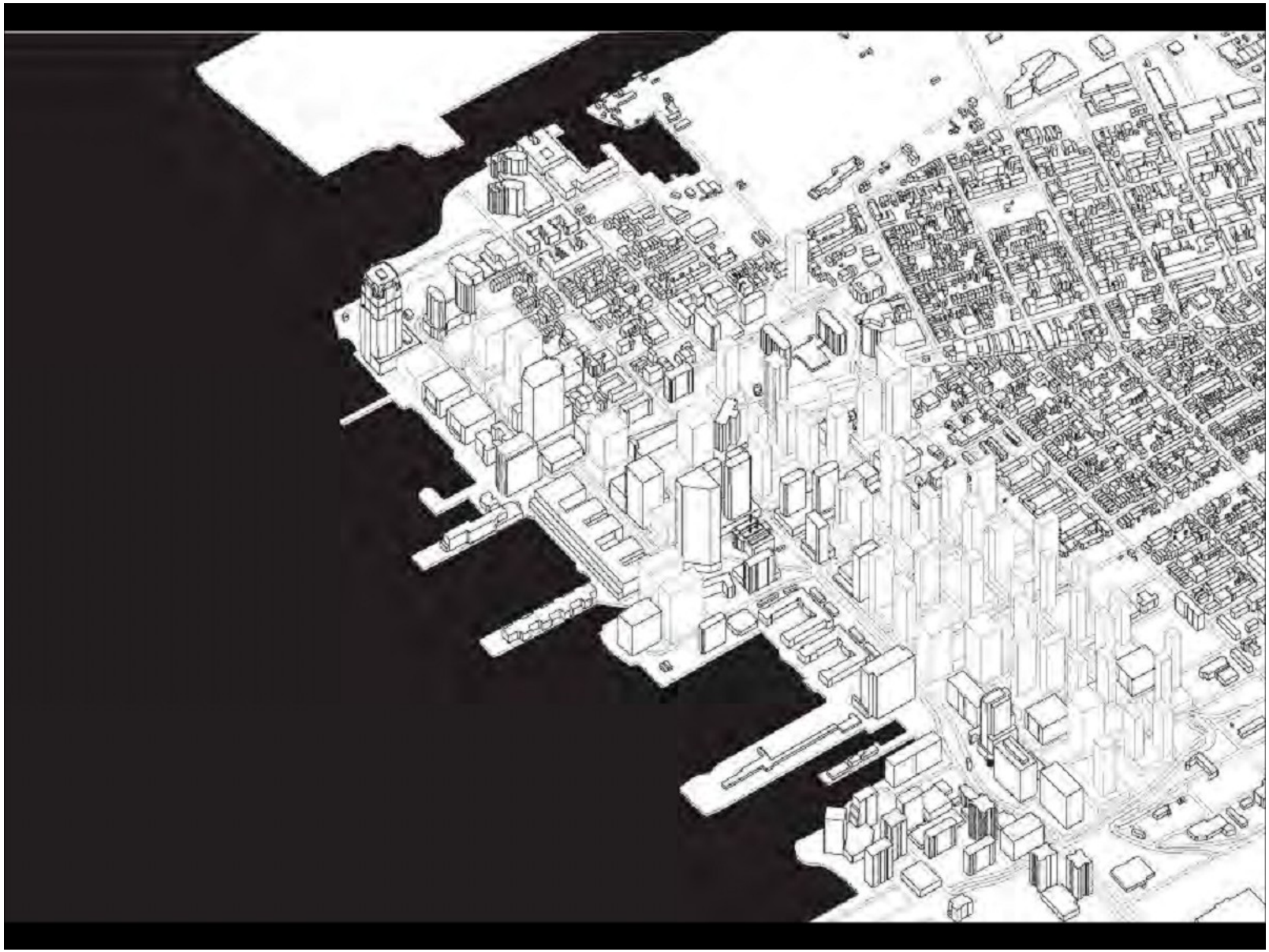

Major Development Projects to 2010
N
PATH TO 33rd Street
PATH TO World Trade Center
Office/Commercial Developments
Residential Developments


Major Development Projects: The Next Decade
N
PATH TO 33rd Street
PATH TO World Trade Center
Office/Commercial Developments
Residential Developments

Population Growth








LUXURY
RENTALS
LIBERTY
TOWERS
201.433.6700
PUBLIC
PARKING
NOW LEASING 201.433.6700
LIBERTY TOWERS

HARBORSIDE PLAZA VI & VII
EXCHANGE PLACE
JERSEY CITY , NJ

NO	DATE	ISSUE OR REVISION
01	2.16.12	PRELIMINARY AND FINAL SITE PLAN

KEY PLAN

hlw

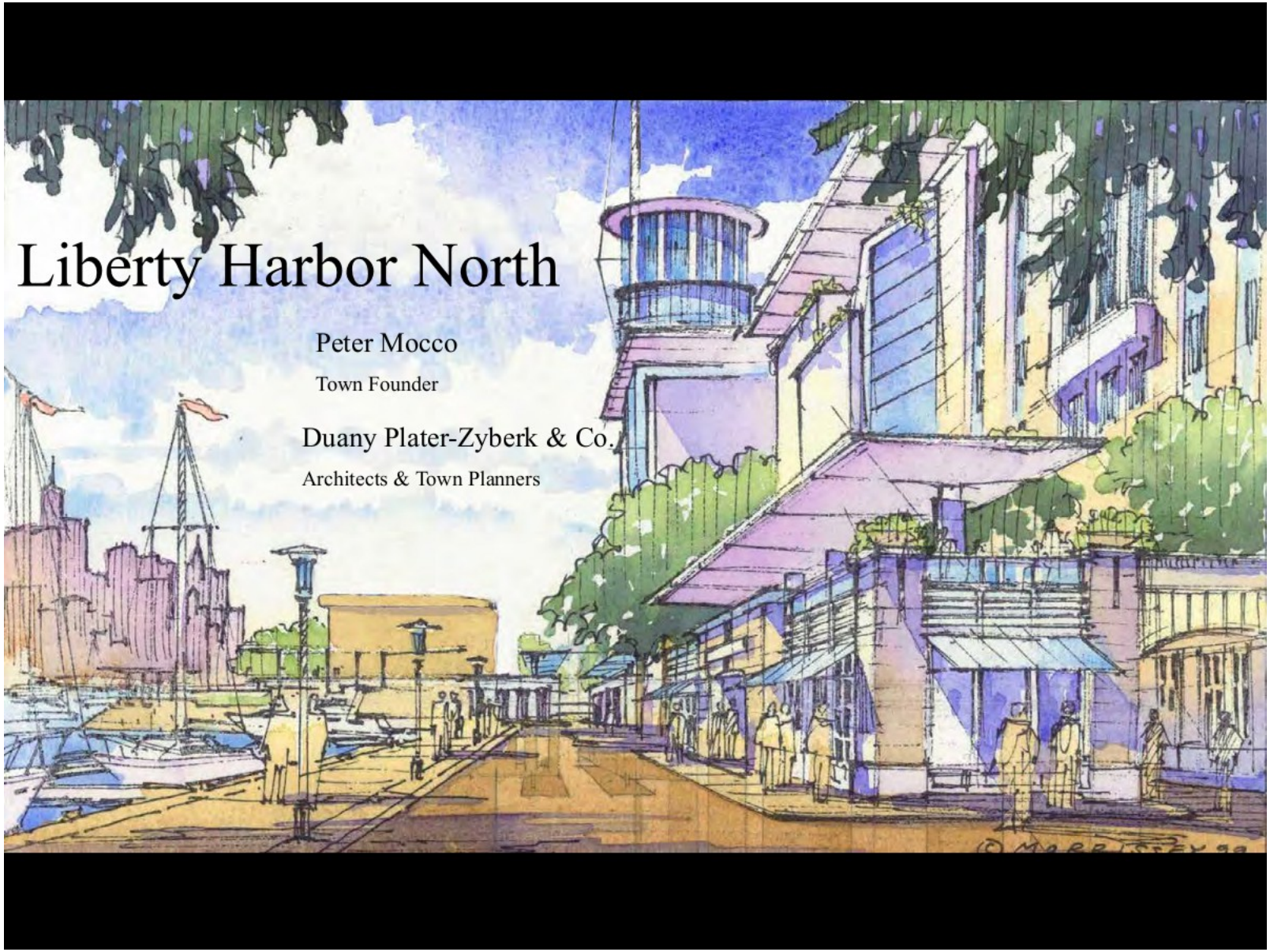
HLW International LLP
Architecture
Engineering
Interiors
Planning
Consulting

Drawing Title
ARTIST IMPRESSION
EAST SIDE

SCALE	DATE
1/16"=1'-0"	02/21/2012
DRAWN BY	PROJECT NO
	2011-0055

DRAWING NO
A401

01 GROUND FLOOR PLAN


Liberty Harbor North
Peter Mocco
Town Founder
Duany Plater-Zyberk & Co.
Architects & Town Planners

Gulls Cove Condominiums Liberty Harbor North Jersey City, NJ
Dean Marchetto Architects PC


NJ TRANSIT
Martin Luther King
Drive Station

RECOMMENDATION FOR REAL ESTATE AND INFRASTRUCTURE DEVELOPMENT

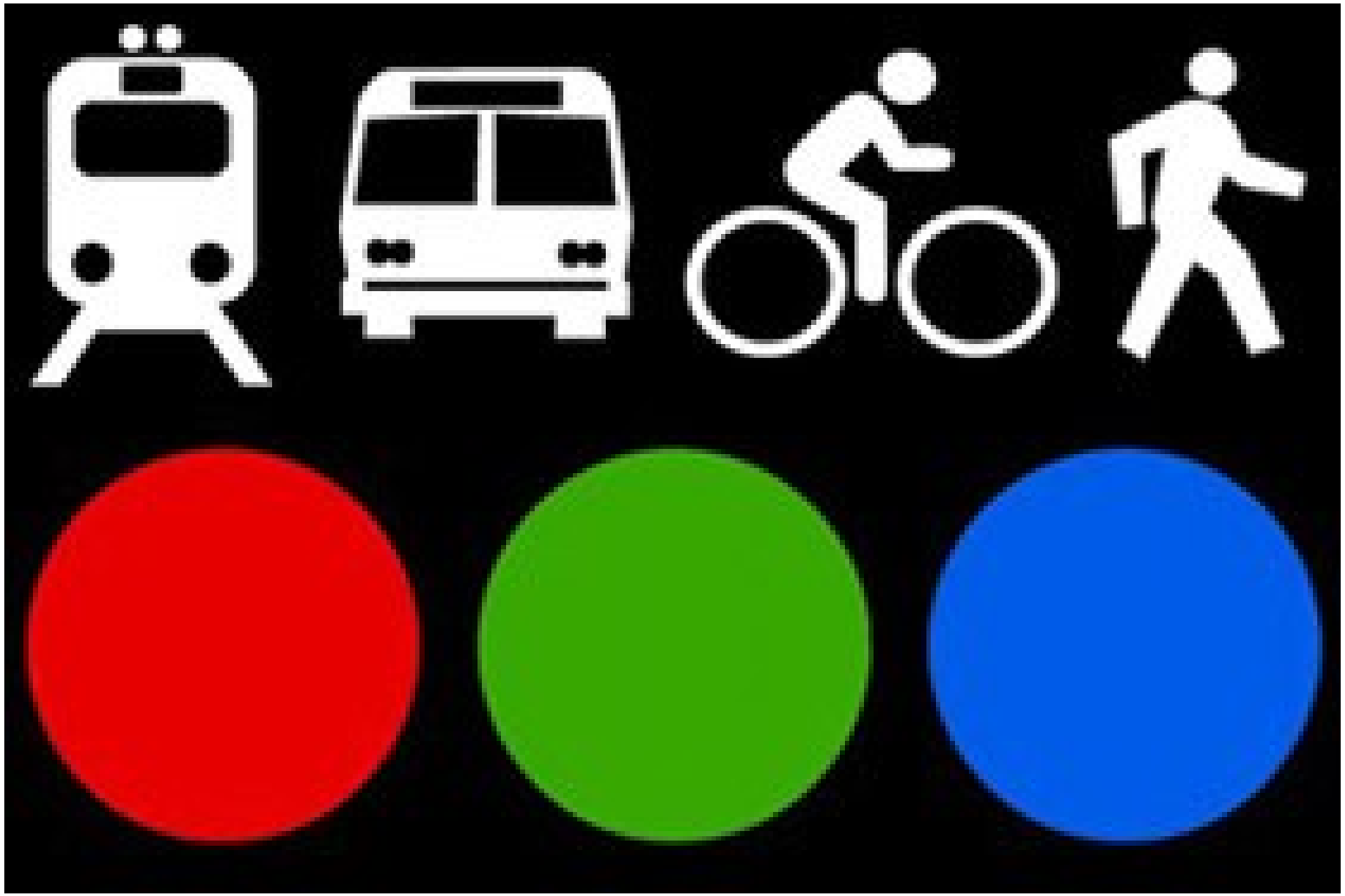
DETROIT IS A SYMBOL OF THE OLD ECONOMY'S DECLINE.

SPRAWL — MOVEMENT OF JOBS OUT OF THE CITY – TIME CONSUMING TRAVEL & UNECONIMICAL - RESTRICTS SOCIAL MOVEMENT OF POOR

EFFECTIVE PUBLIC TRANSPORTATION SYSTEM NEARLY IMPOSSIBLE

BUT NOT SAME FOR RICH

SEAMLESS



UNIFIED TICKETING

WHY UNIFIED TICKETING

- UNIFIED TICKETING IS A PIECE OF INFRASTRUCTURE THAT PROVIDES THE ABILITY FOR SMARTCARDS (AND OTHER TOKENS) TO BE USED ACROSS ALL MODES (RAIL, BUS, FERRY, TAXI) OF PUBLIC TRANSPORT TICKETING AND OTHER PAYMENTS.
- AT THE BOTTOM IS THE USER WITH SMART CARDS AND TOKENS USING IT TO TRAVEL THROUGH VARIOUS MODES.
- ALL MODES HAVE SAME KIND AND INTEGRATED CARD READER BUT VARYING OR SIMILAR FARE SYSTEM
- AT THE END IS A UNIFIED TICKETING SYSTEM WHICH CHECKS, MONITOR AND ASSIMILATES DAILY REGISTERED CARD USES, USER AND REVENUE.

Delhi Case Study, India

Delhi Metro AFC Central Clearinghouse

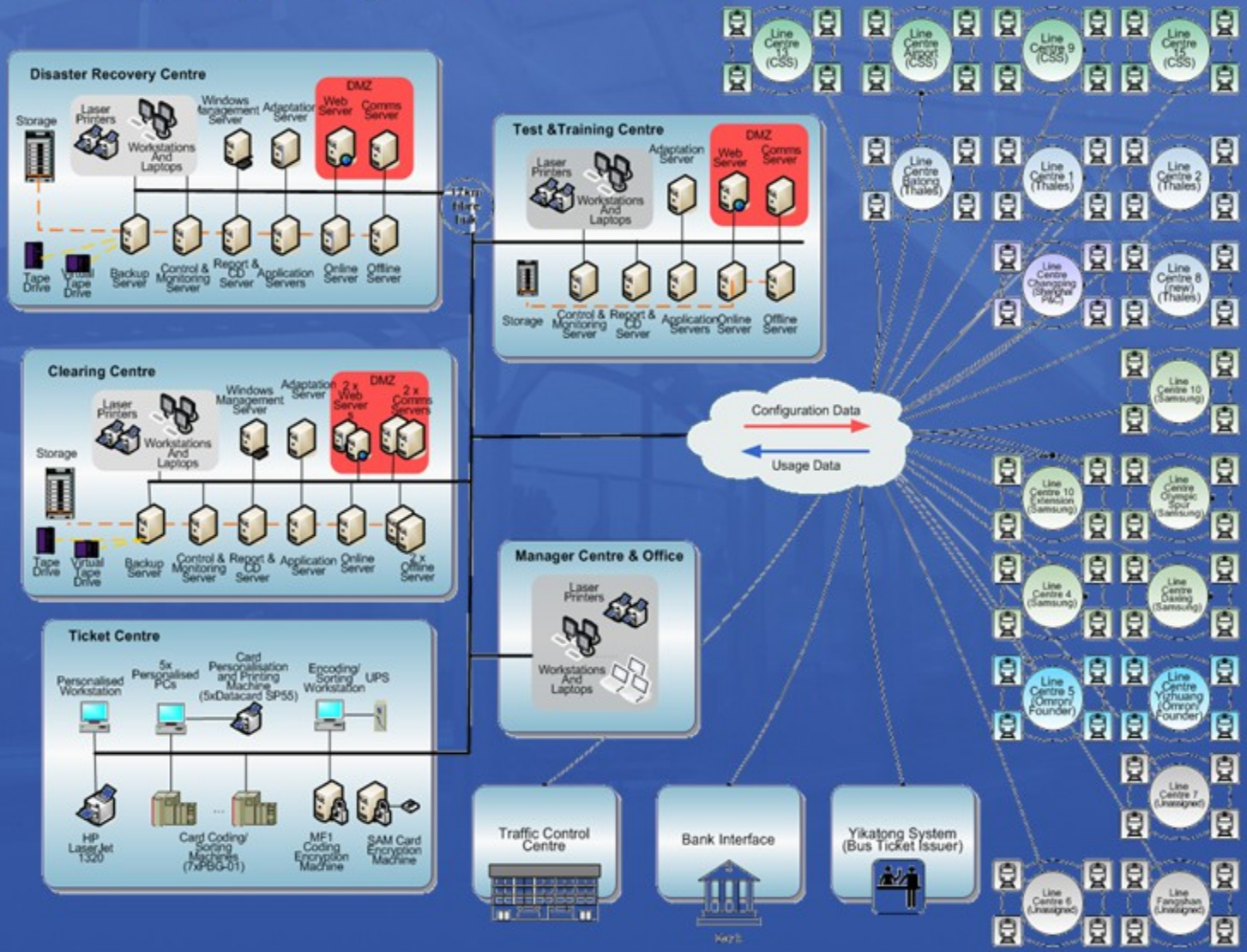
- Rapid transit light rail (metro) system
- Elevated, at-grade and under-ground sections
- ERG Central Clearing House installed for all metro Lines AFC systems
- Red Line (21 stations), Yellow Line (15 stations) and Blue Line (32 stations)
- Designed for Delhi's population of 14 million and beyond

BEIJING-CASE STUDY

BEIJING METRO AFC CENTRAL CLEARINGHOUSE IS THE MOST POWERFUL OF ITS TYPE IN THE WORLD

- SUPPORTS EXISTING BUS AND THE NEW TRAIN TICKETS
- FULL APPORTIONMENT & RECONCILIATION OF FINANCIAL POSITIONS PER LINE
- HIGH AVAILABILITY SYSTEM IMPLEMENTATION
- HOT-STANDBY DISASTER RECOVERY SYSTEM
- INTEGRATION AND TRAINING SYSTEMS
- DESIGNED AND TESTED FOR A POPULATION OF 30 MILLION
  - 10 MILLION PASSENGER JOURNEYS PER DAY
  - 25 LINES
  - 500 STATIONS
- SYSTEM WENT LIVE ON THE 9TH OF JUNE 2009
- SUPPORTS RE-USABLE AND PERSONALISED CARDS

Beijing-Systems Architecture



CONCLUSION

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•REDUCE URBAN SPRAWL
- TRANSIT ORIENTED DEVELOPMENT

•SOCIALLY EQUITABLE
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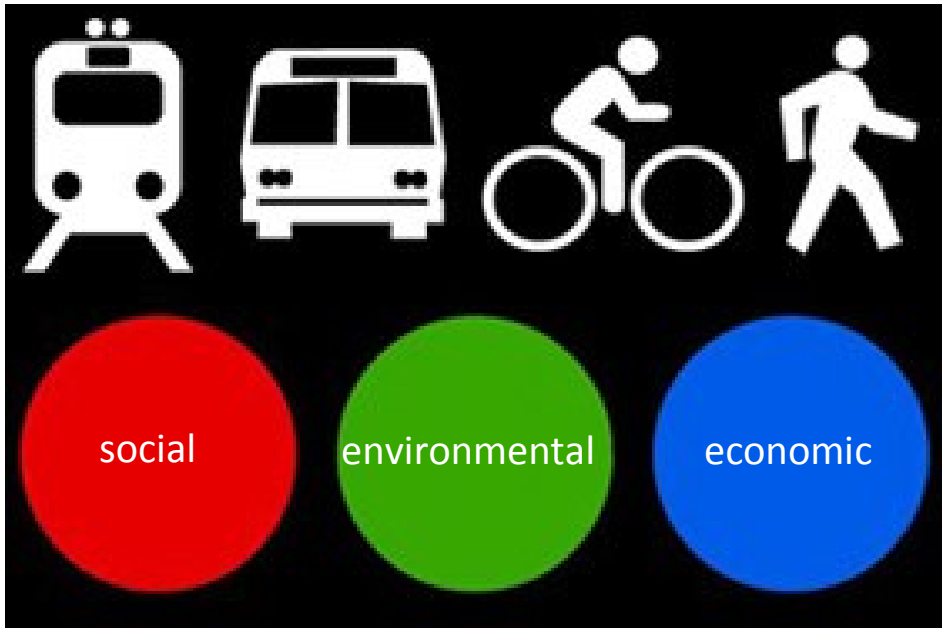

A TRIP NOT MADE