

“Options for new alternatives for development control regulation and justification for increasing FSI”

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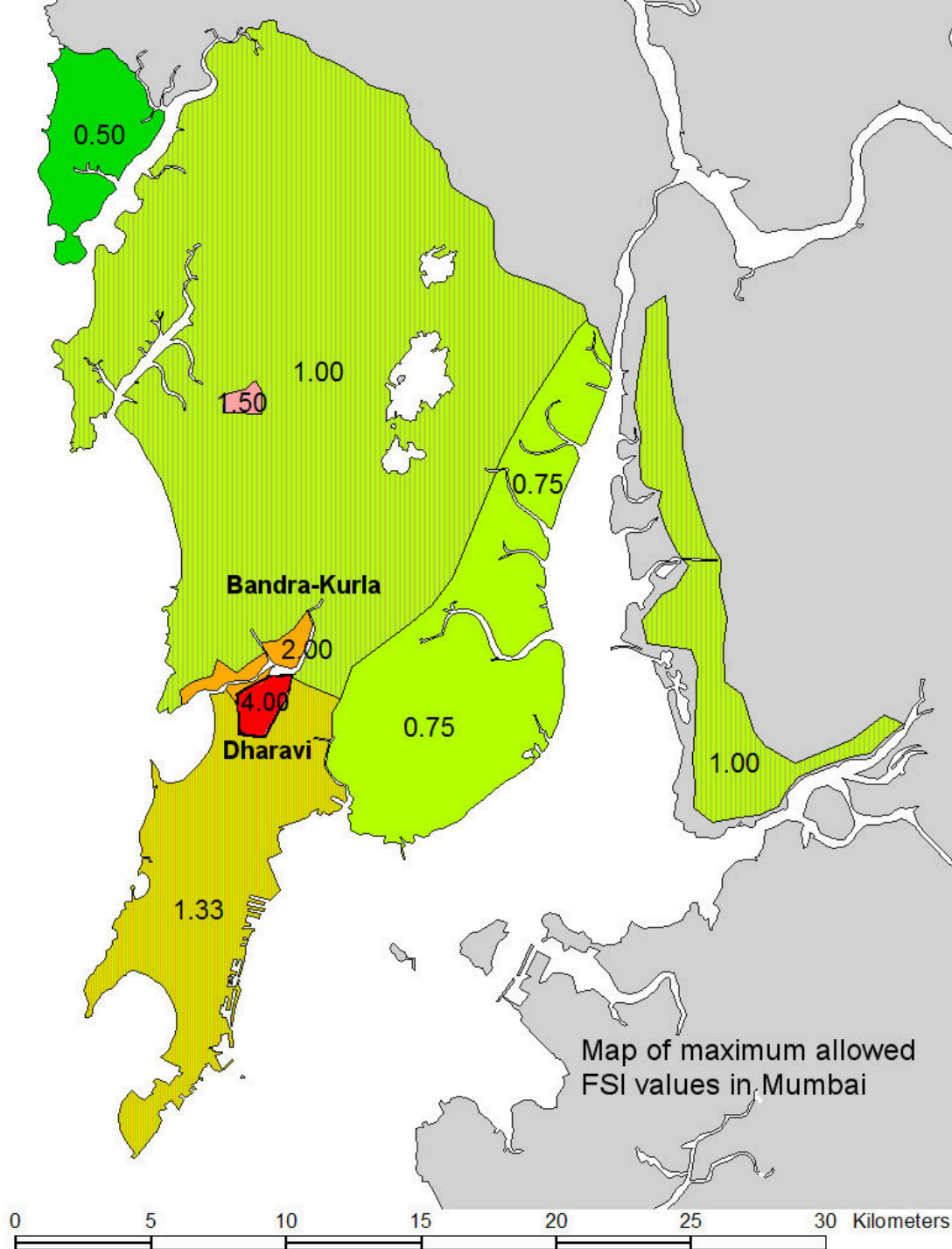
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- Main issues created by current FSI regulations
- How FSI regulations are implemented in other cities
- Work program to reform FSI
- Transition alternatives

Mumbai FSI: could it be set according to a new concept? How to do it.

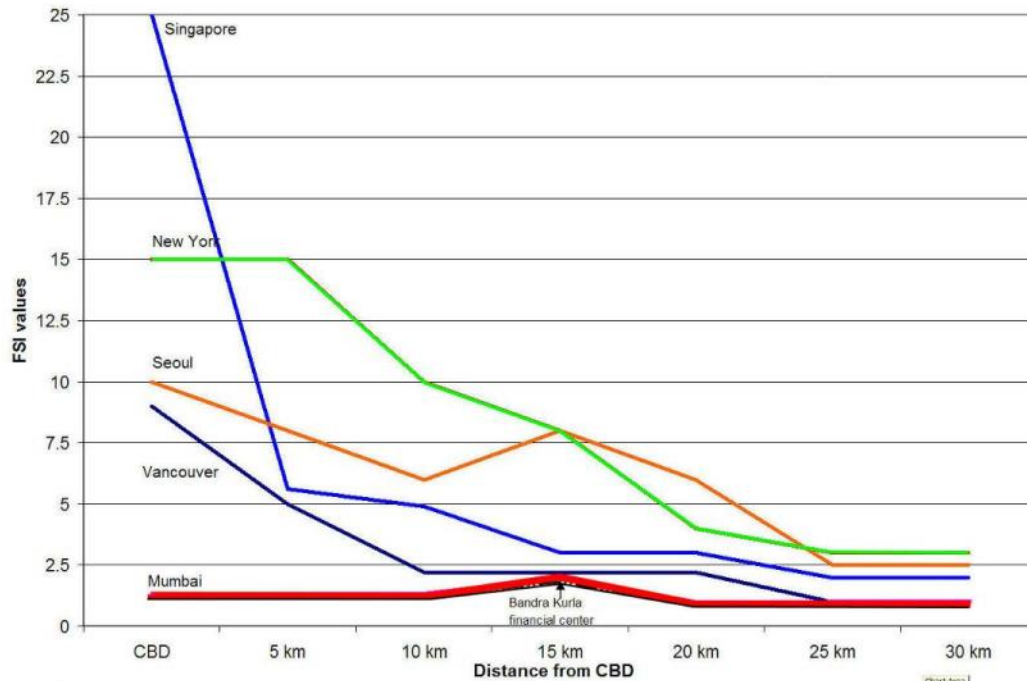
Mumbai FSI values are very different from most major cities around the world. In Mumbai FSI values are:

- Very low
- Not differentiated between commercial and residential
- Uniform over very large areas
- not reflecting the difference in accessibility around train stations
- not linked to land market values



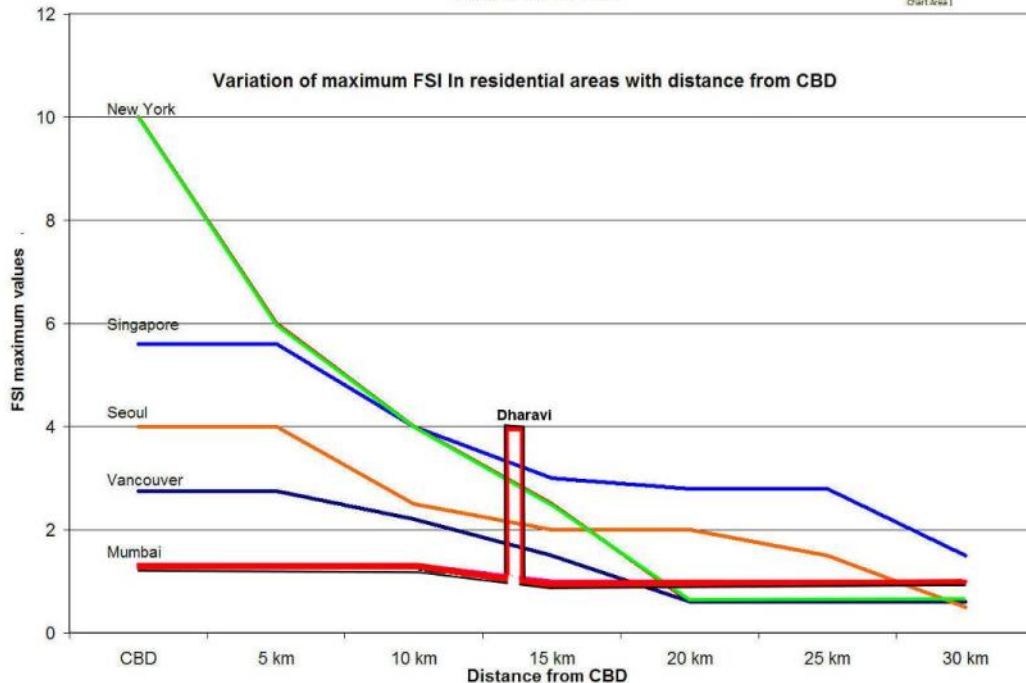
- Based on the experience with the spatial distribution of FSI values in other cities, it would appear, looking at this map, that Dharavi is the financial center and that Nariman Point is a remote suburb!

Variations of maximum FSI in commercial areas



FSI variations with distance from CBD in 5 cities.

The variations in values between cities reflect different spatial strategies. In Mumbai the Dharavi reflects an ad hoc solution to finance an urban renewal project.



FSI and TDRs in Mumbai: a commodity sold by the government to developers?

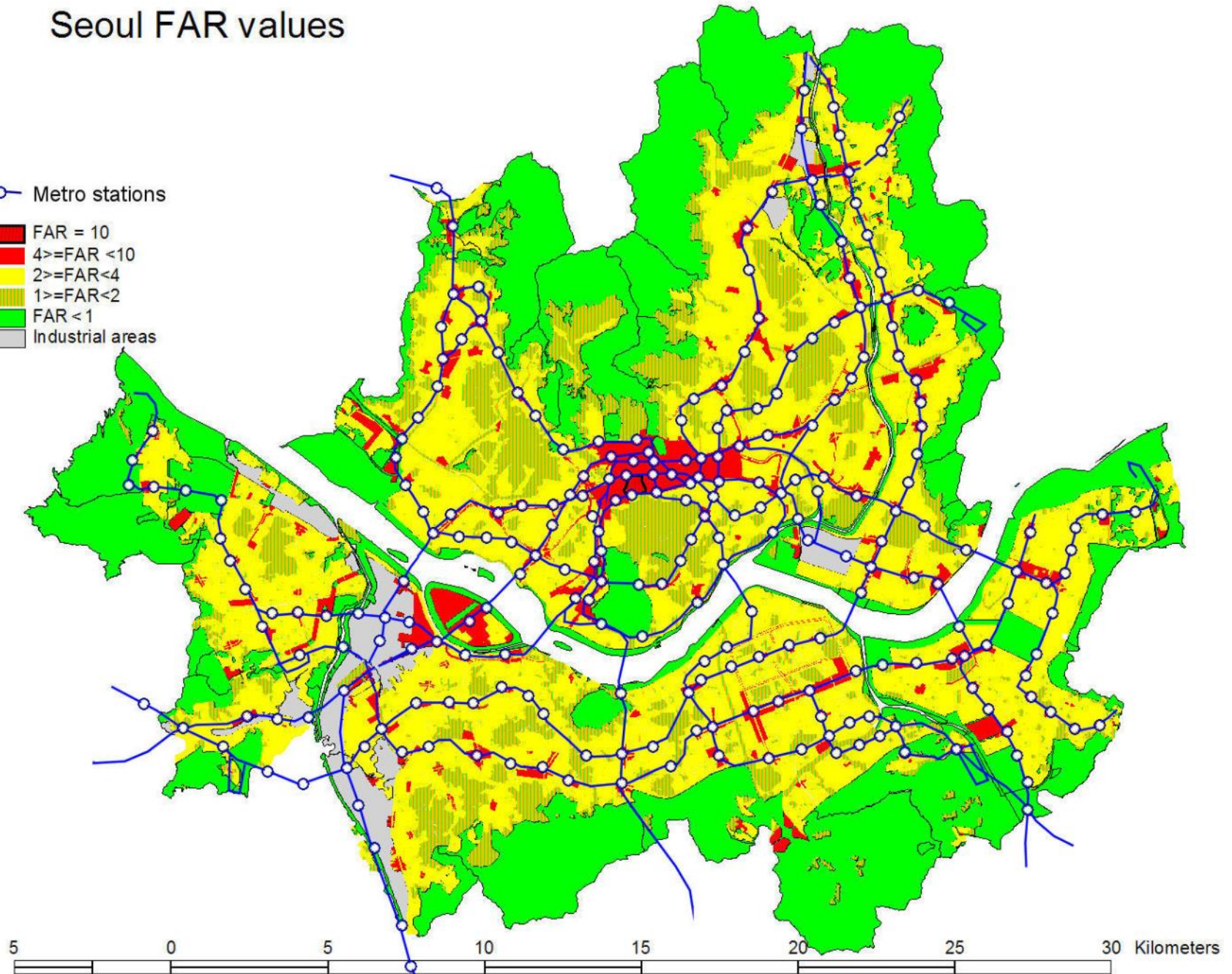
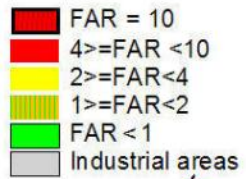
- The rationale for FSI control in most cities of the world is to decrease the costs (“externalities”) imposed by high buildings on neighbors or on the community
- TDRs are also used in other cities than Mumbai but in a different way:
 - In New York, buildings' owners can sell their allowed FSI to adjacent properties only, so that the average FSI in the block stays the same as the one projected (churches in Manhattan sell their “air rights”, for instance) This is a way of protecting historical buildings
 - In Curitiba, properties who could not be redeveloped because of the master plan zoning were allowed to sell a standard FSI to developers who could use it to build in a designated high density transport corridor. The TDR in Curitiba is a way of compensating land owners who had been assigned a low FSI.

Seoul

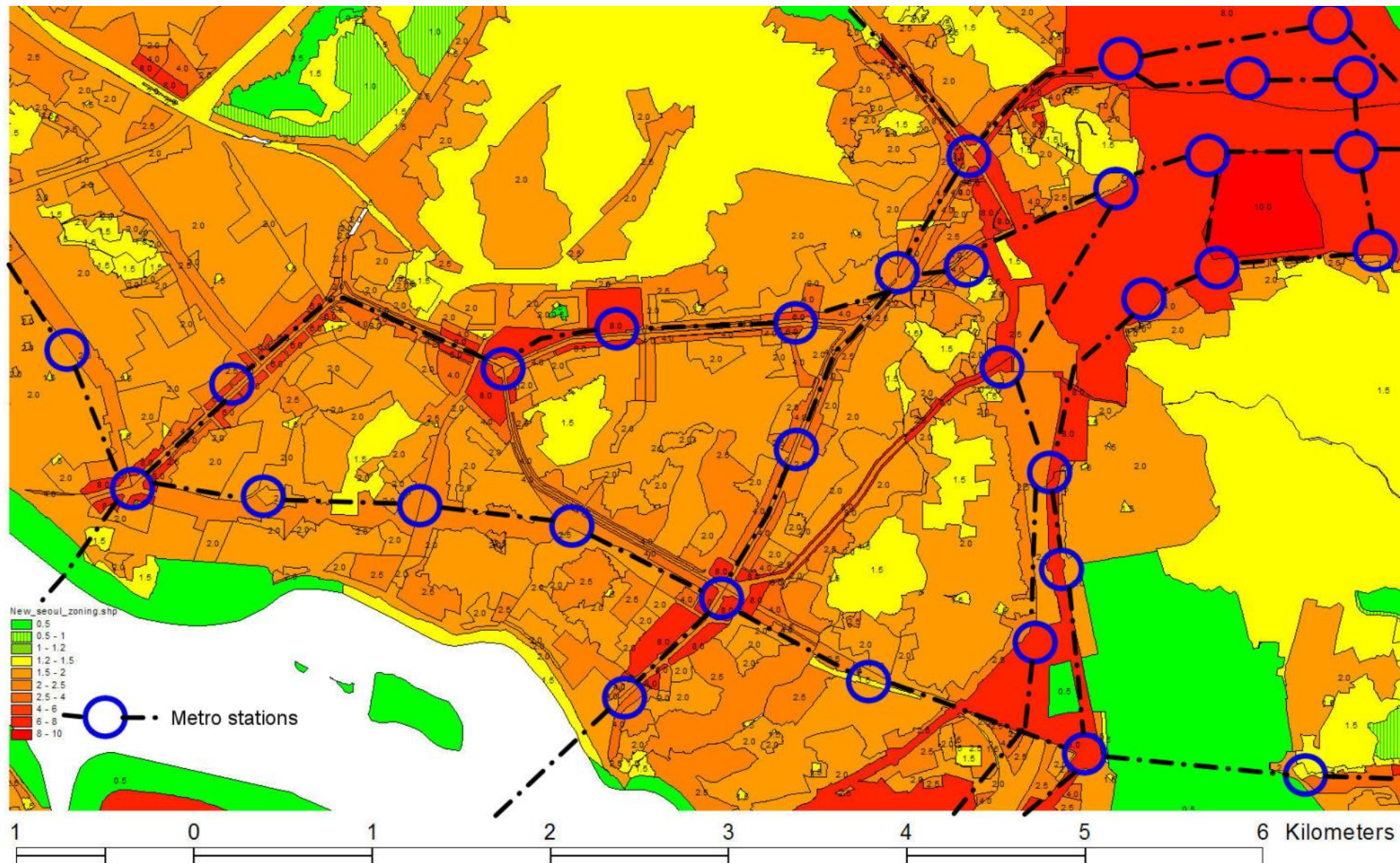
- City spatial structure:
 - compact, expansion restricted by hills and northern border
 - Polycentric, with a large CBD but many important subcenters
 - Built up population density in the built-up area similar to Mumbai
- Transport
 - Grid like metro system, linking the various sub-centers and the CBD. Seoul metro is the 3rd longest in the world
- FSI strategy:
 - 10 in part of the CBD, 8 in the rest of the CBD and in subcenters
 - 0.5 to 4 in residential areas
 - Higher FSI in areas around main metro nodes

Seoul FAR values

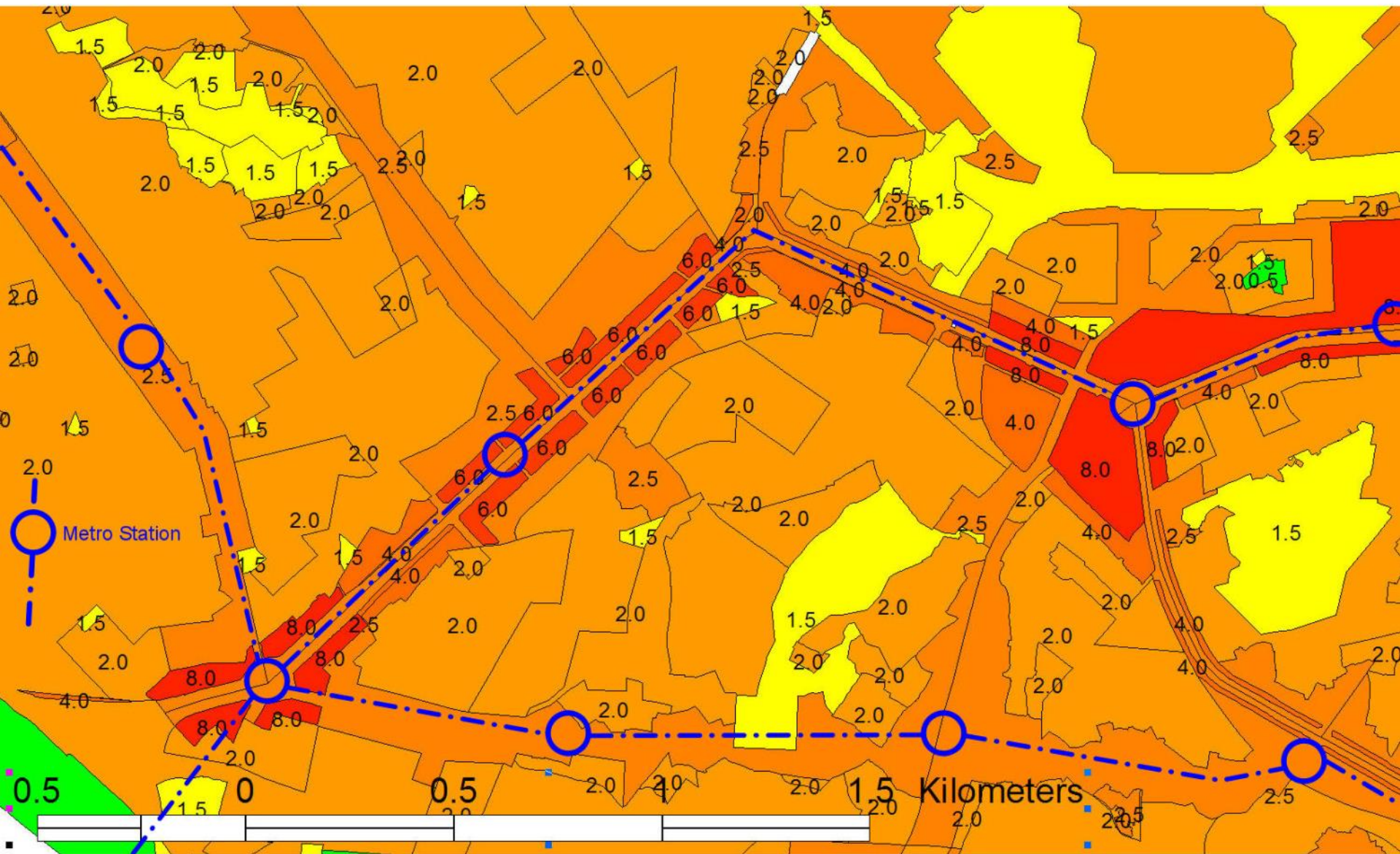
○ Metro stations



Seoul: variations in FSI are linked to the location of metro stations and to the network of main streets

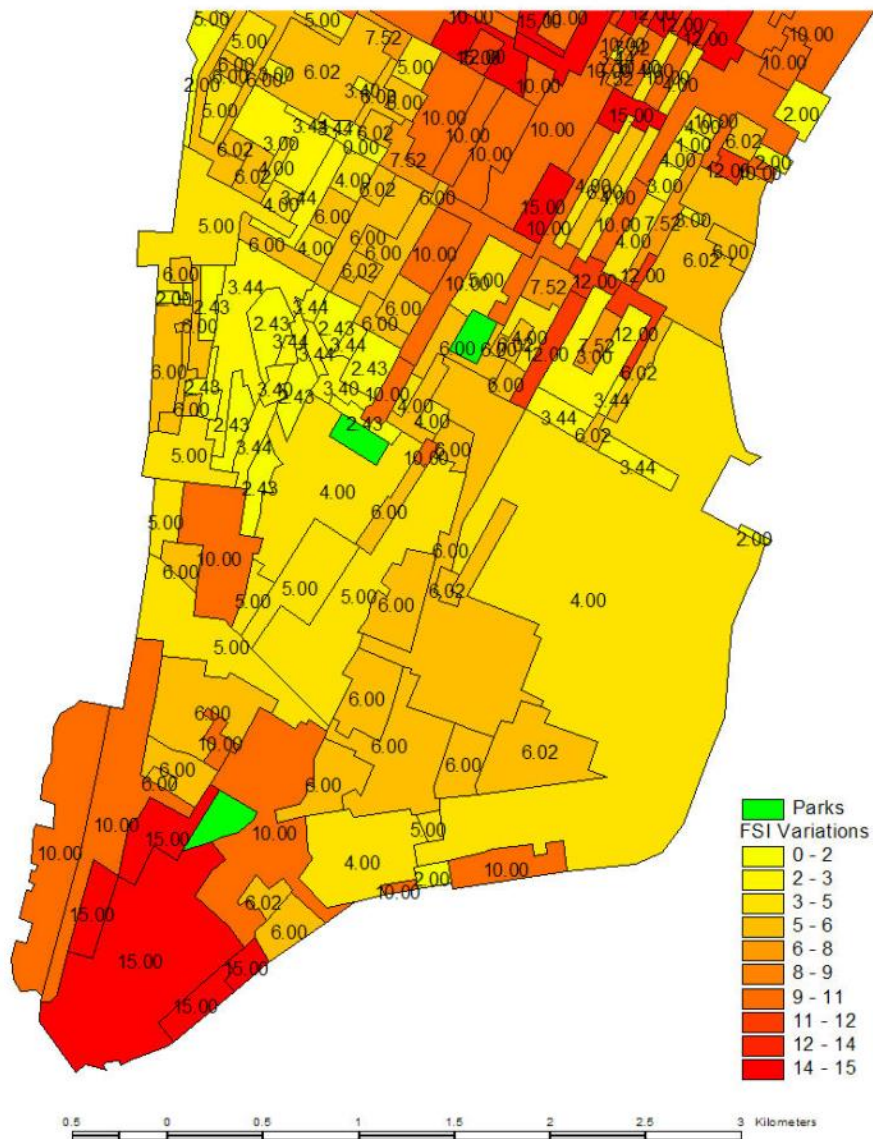


Seoul – FSI zoning (detail)



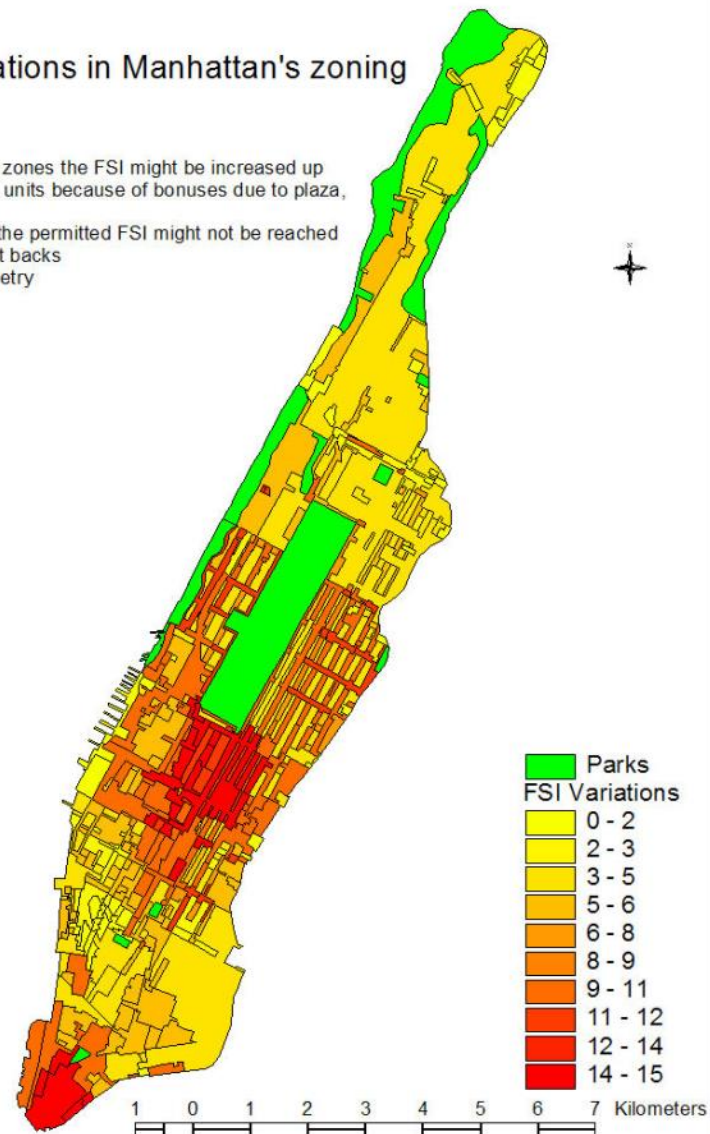
New York

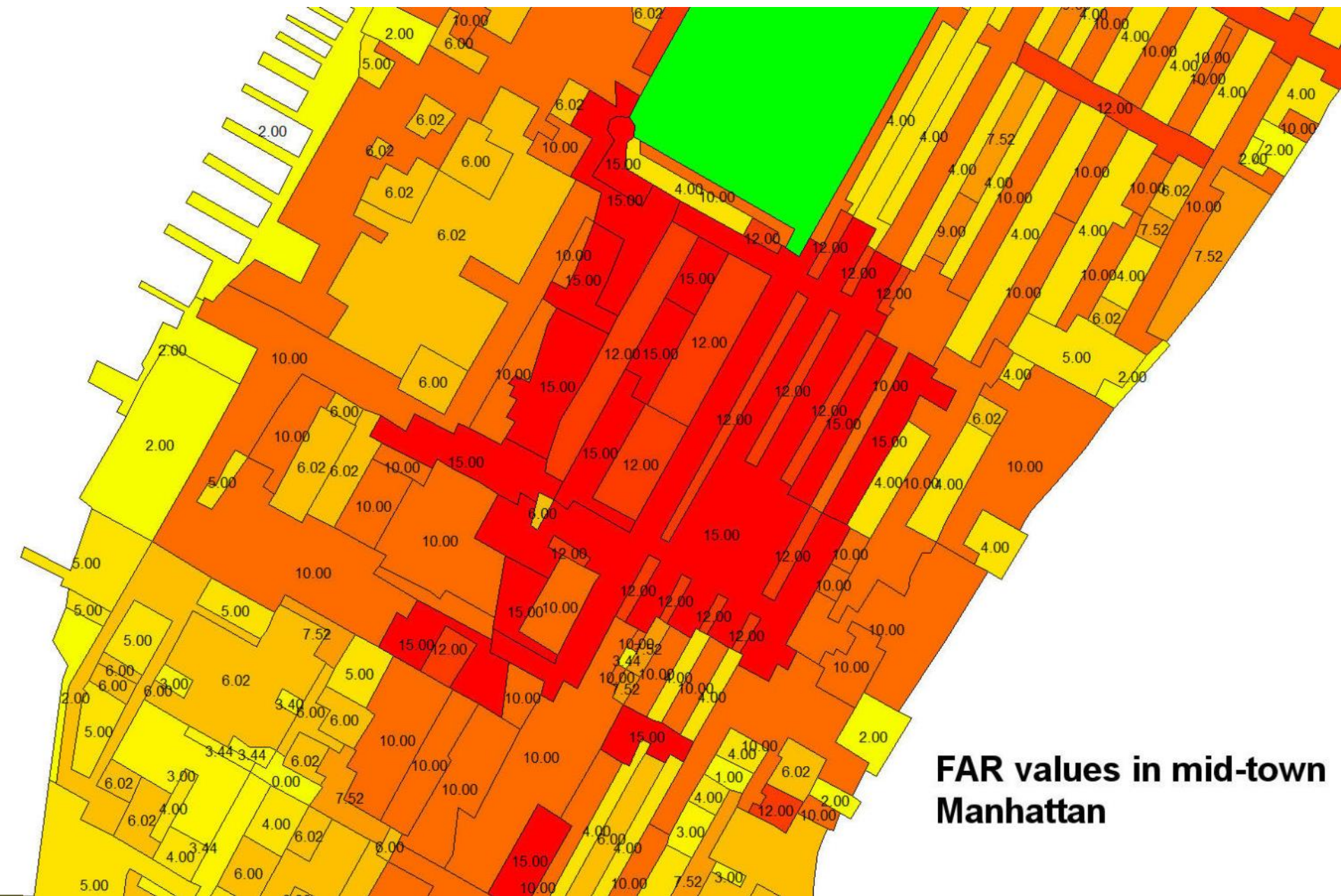
- City spatial structure
 - One of the few monocentric city in the US,
 - 2 specialized CBDs in Manhattan
- Transport
 - 30% of trips by transit (60% in Manhattan)
 - The longest metro network in the world
 - Mostly radio-concentric metro network
- FSI:
 - 15 in CBD, 10 along main avenues
 - Residential FSI from 0.6 in the suburbs to 10 in Manhattan next to CBDs.



FSI Variations in Manhattan's zoning

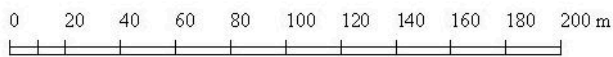
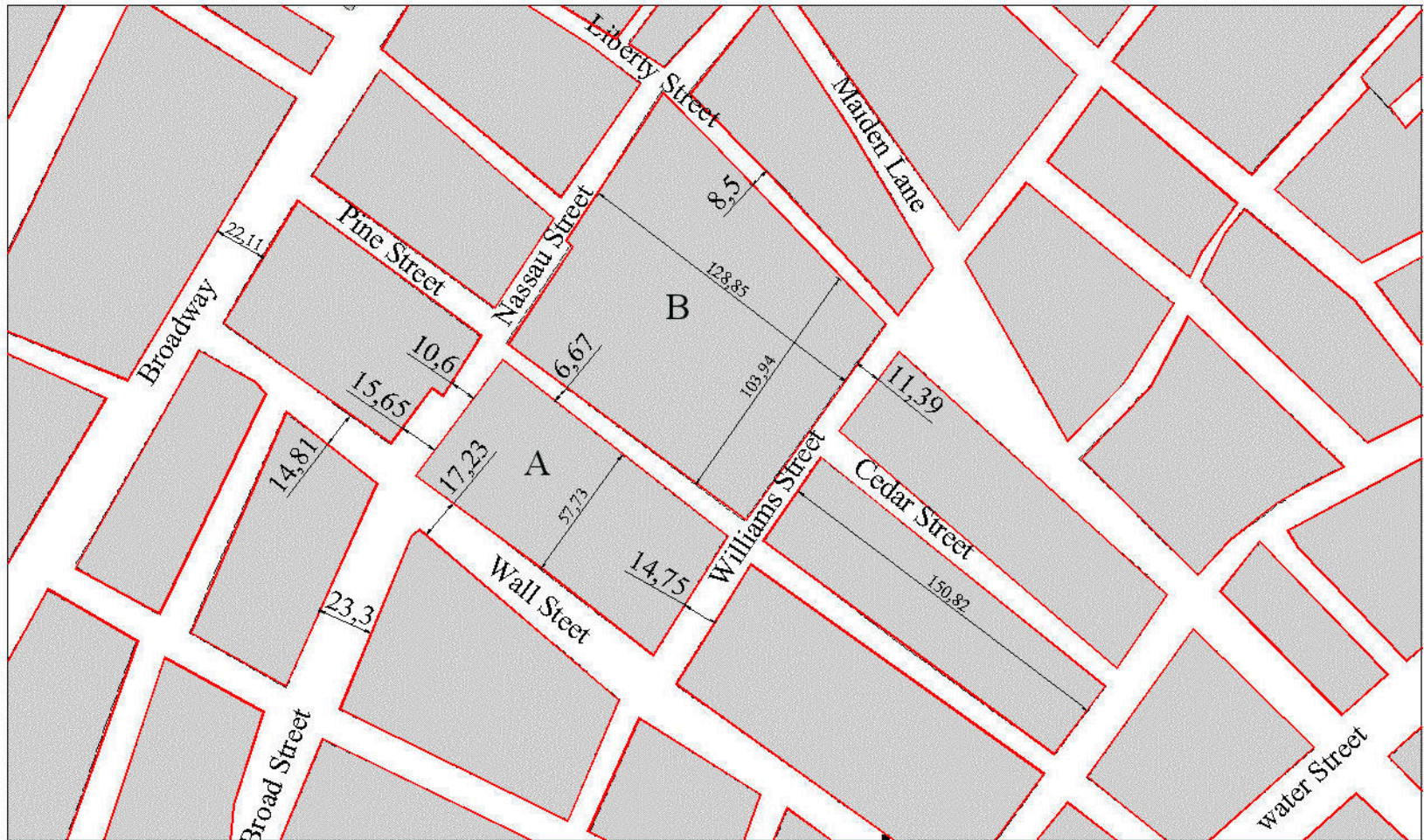
Note: in some zones the FSI might be increased up to 2 additional units because of bonuses due to plaza, arcades etc.
In some area the permitted FSI might not be reached because of set backs and plot geometry

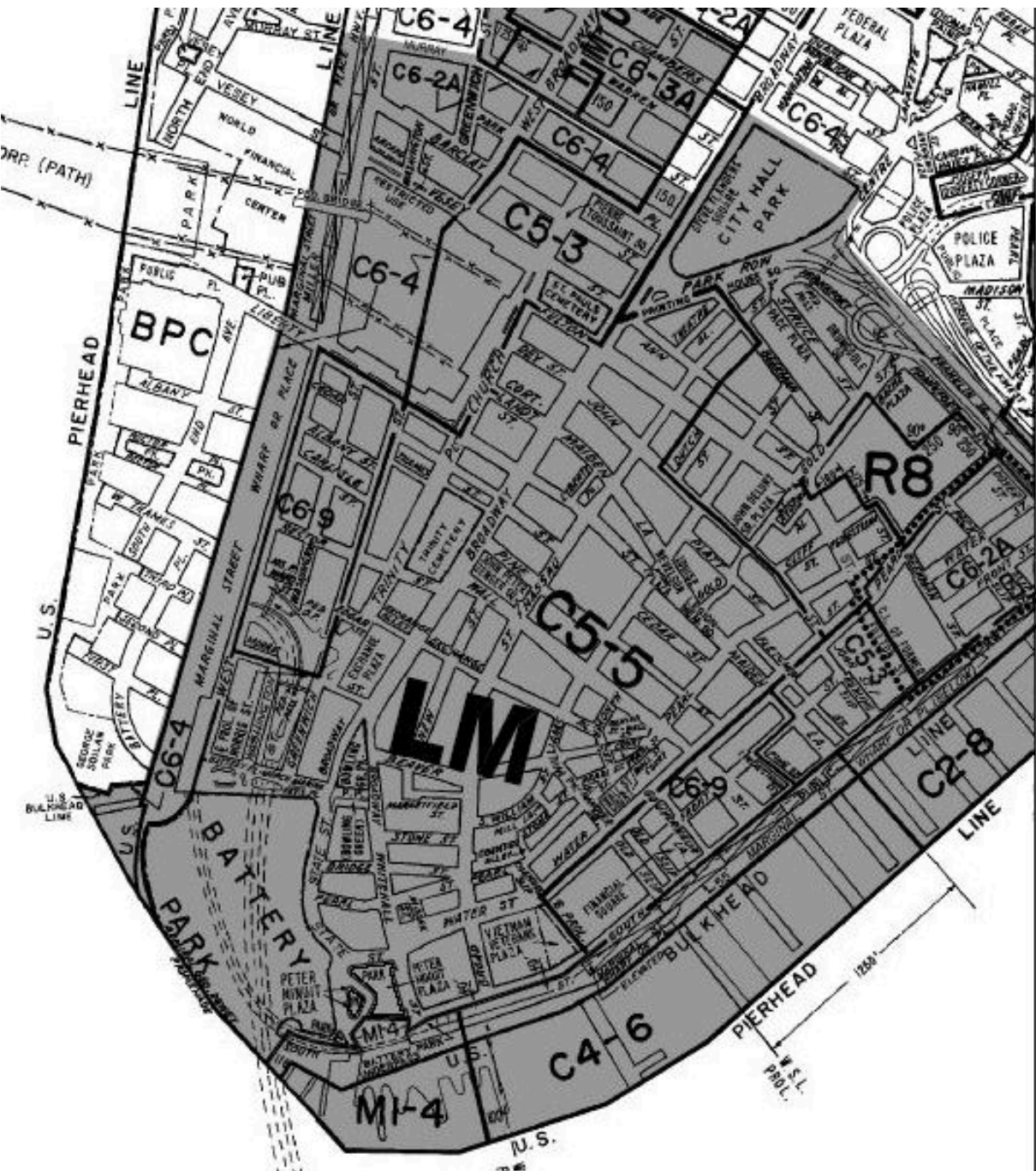




The FSI = 15 in the financial district of Manhattan has been successfully superimposed on a network of streets dating from the 18 century

Manhattan Financial District
Zoning : C5-5 FAR= 15



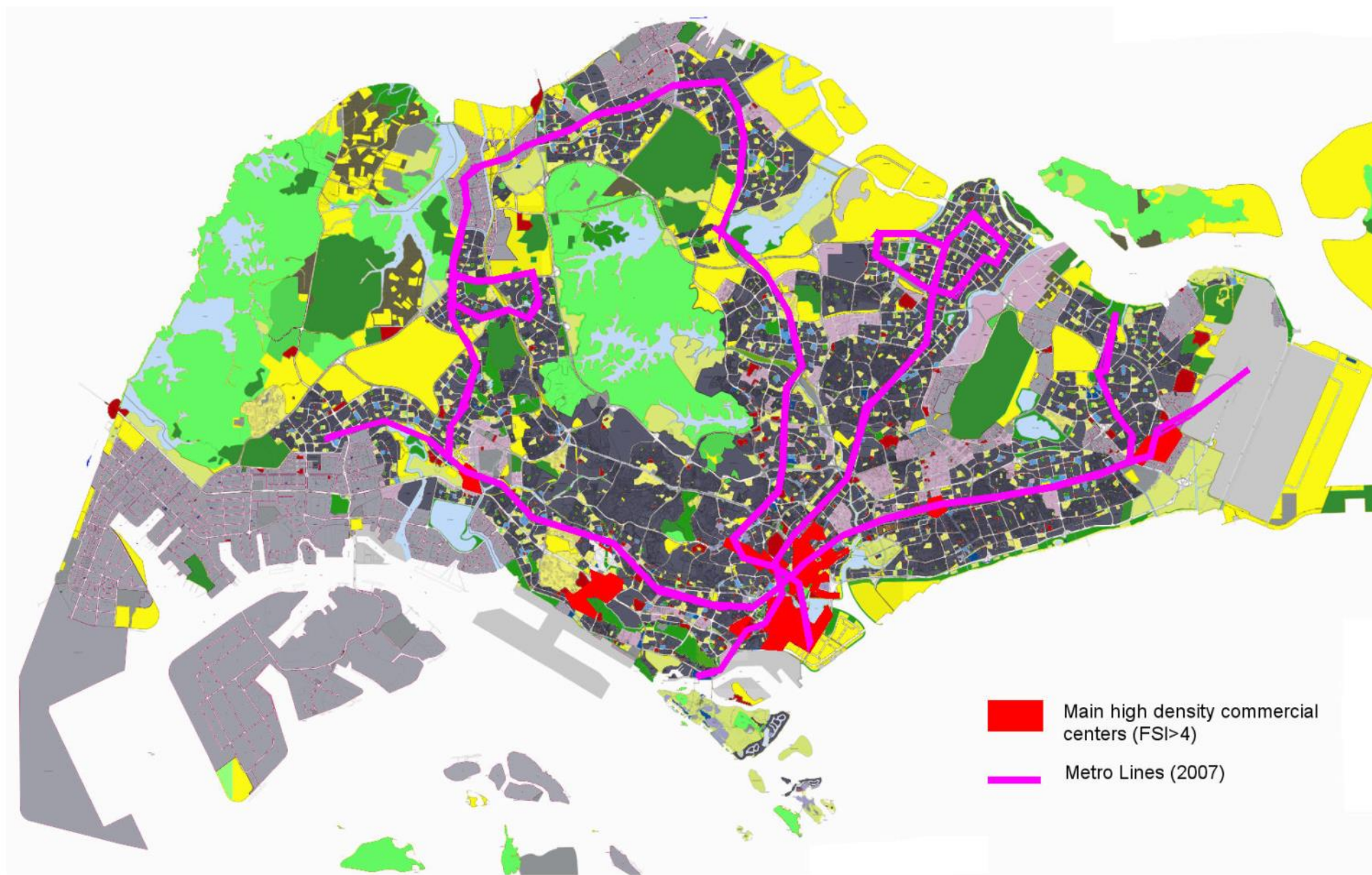


Extract of New York zoning map for the financial district (Wall Street)

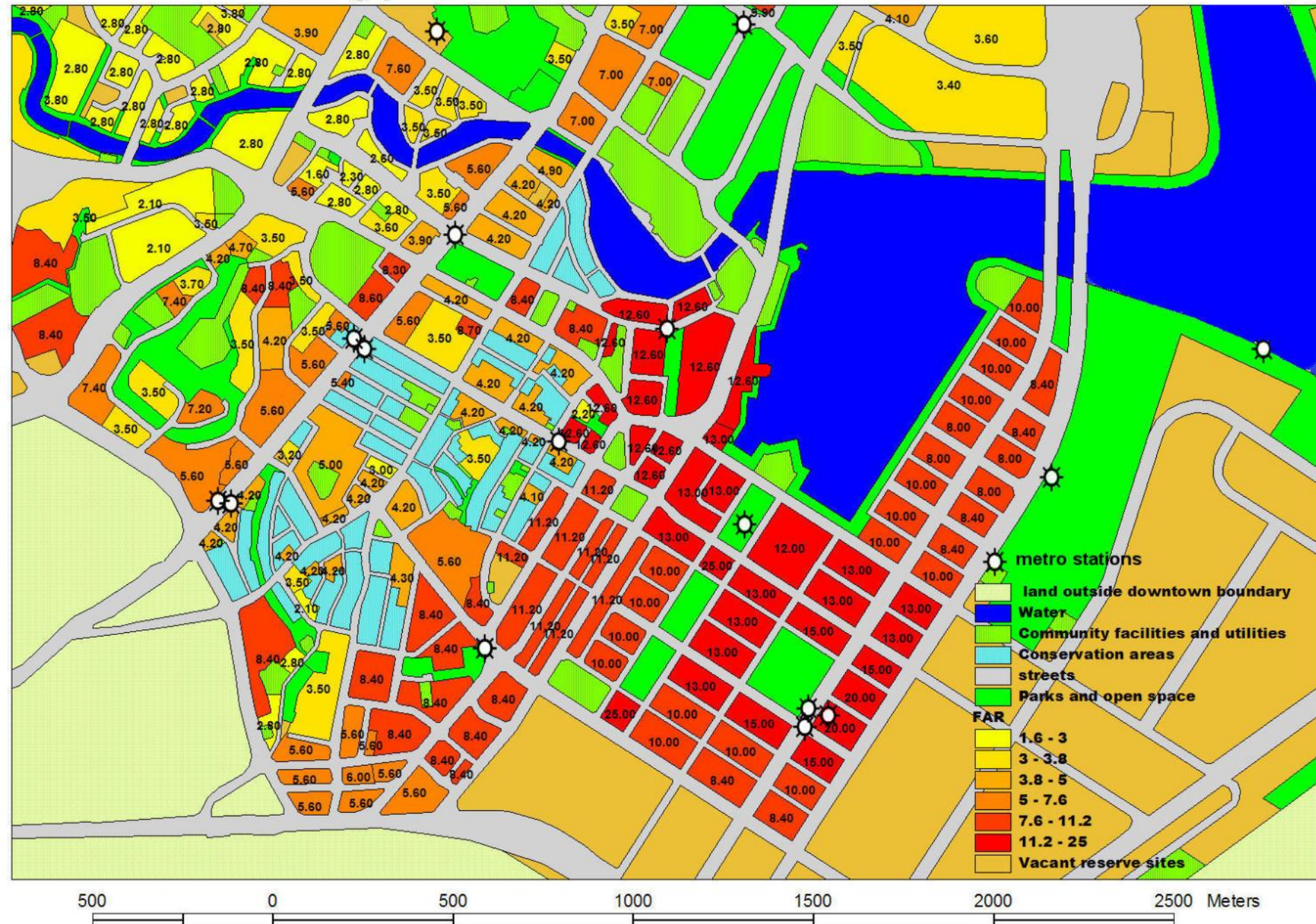
Each zone type, for instance, C5-5 or R8 in this example, has a set of regulations like permitted uses, set backs, lot coverage, maximum heights, etc, the FSI is only one parameters among other. However, for developers the FSI remain one of the most important parameter.

Singapore

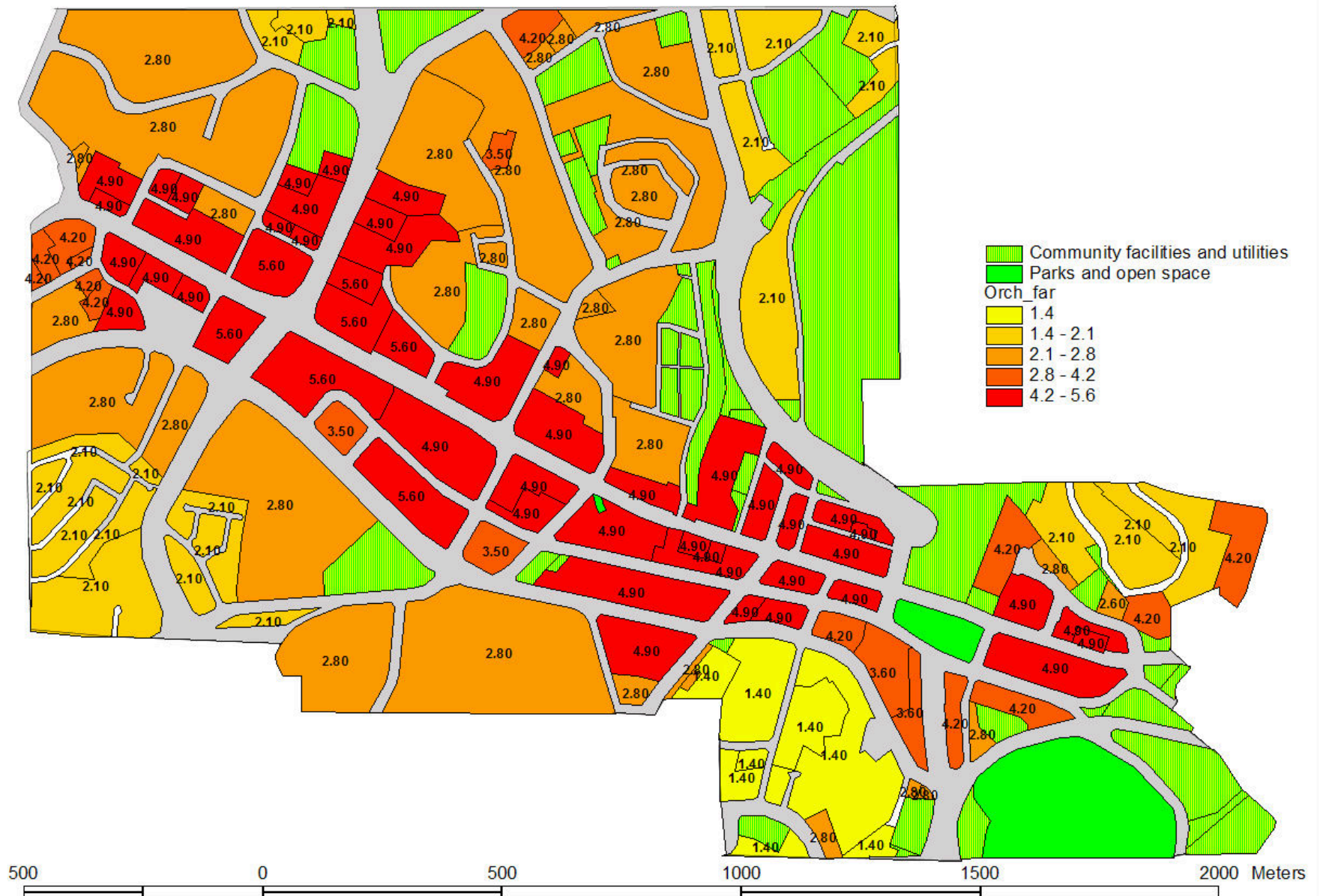
- Dominantly monocentric city
- Transport:
 - Radio-concentric metro system, working with an extensive network of feeder buses
 - Congestion pricing for cars in the CBD
- FSI :
 - very high in the CBD, 8 to 25!
 - from 1.5 to 4 in most residential areas, 6 next to the CBD



Singapore - FAR values in Downtown Area



Singapore - FAR values along Orchard Road



How to design new FSI values for Mumbai?

- Design a spatial land use strategy based on current land values and future investments in transport (bridges, highways, metro, BRT) **This is not a new master plan!** Identify high accessibility nodes
- Divide the existing and future built-up areas into land use zones based on accessibility and on existing character of the area;
- Identify and map the historical areas and natural areas that need to be protected, those that should not be redeveloped, and where the new FSI will not be applied;
- Design regulations (FSI, % lot coverage, set backs, etc) for each zone

Transition from the present “commodity FSI” system to the new “spatially determined” FSI

Possible alternatives for the transition:

- **Big Bang**

- Comprehensive plan ready and approved for the entire city
- No more TDRs are issued during preparation of plan, however,
- Already issued but not yet used TDRs are honored

- **Progressive transition**

- New FSI plan prepared and approved for 2 or 3 main streets and high intensity areas around new metro stations and bridge access
- New TDRs can be issued but they have to be used in the areas already mapped for FSI increase
- Meanwhile the comprehensive strategy is prepared and approved
- More areas for FSI increase are prepared every year and where TDRs can be used
- After 2 or 3 years new TDRs are issued only for slum redevelopment and for historical area protection.

What need to be done starting tomorrow

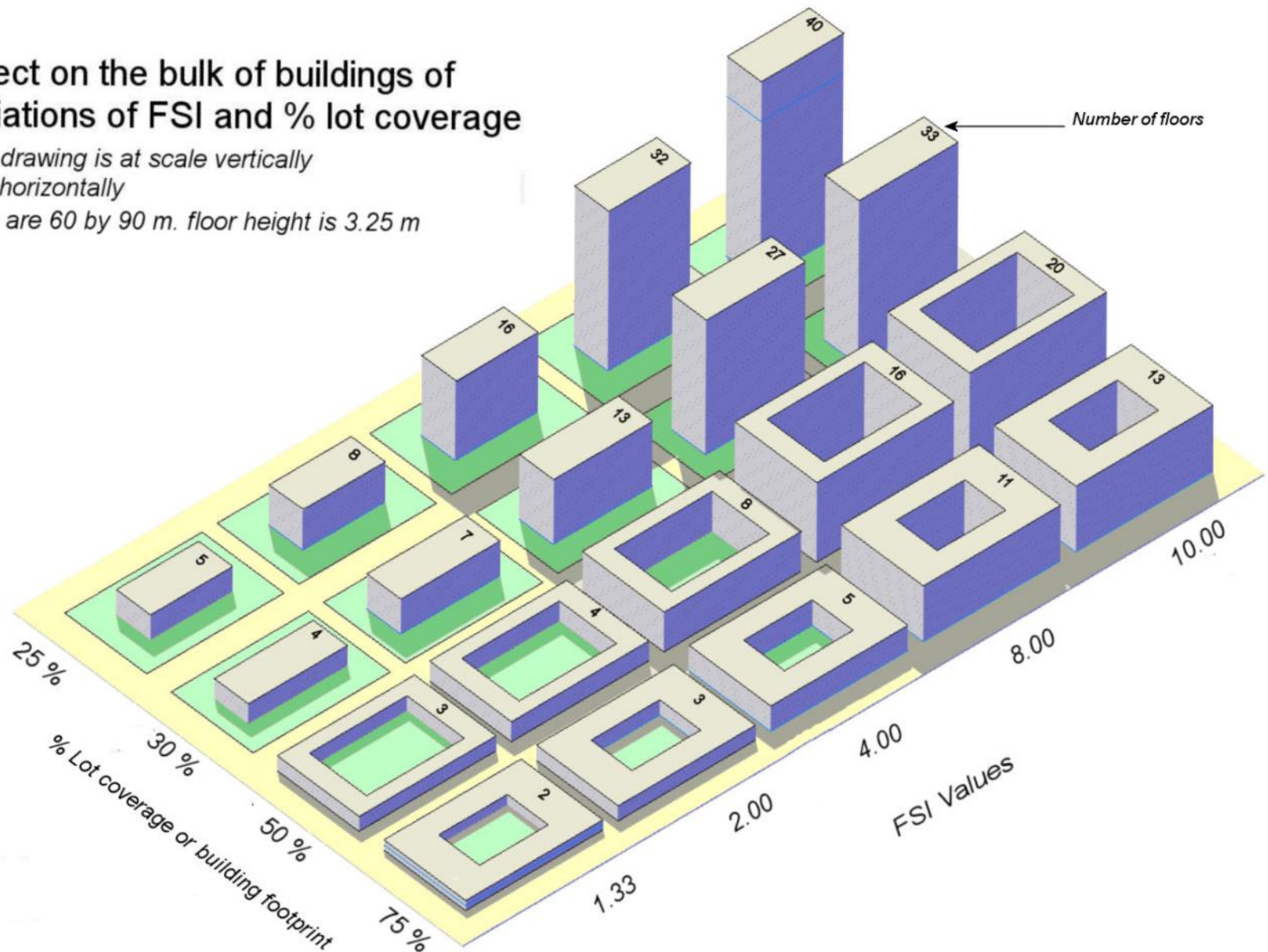
1. Develop the legal and legislative critical path to get spatial strategy and detailed FSI maps approved and ready for implementation
2. Start working on spatial strategy (not a master plan) based on existing transport infrastructure projects and projected ones (new airport, new bridges, etc)
3. Develop additional parameters linked to different FSI values such as set backs, street widening, % building footprint, etc.
4. Special unit to work on FSI and slums and low cost housing standards
5. Monitor real estate prices (including in slums) in areas targeted for FSI increase. This monitoring will be the most important feed back into the spatial strategy

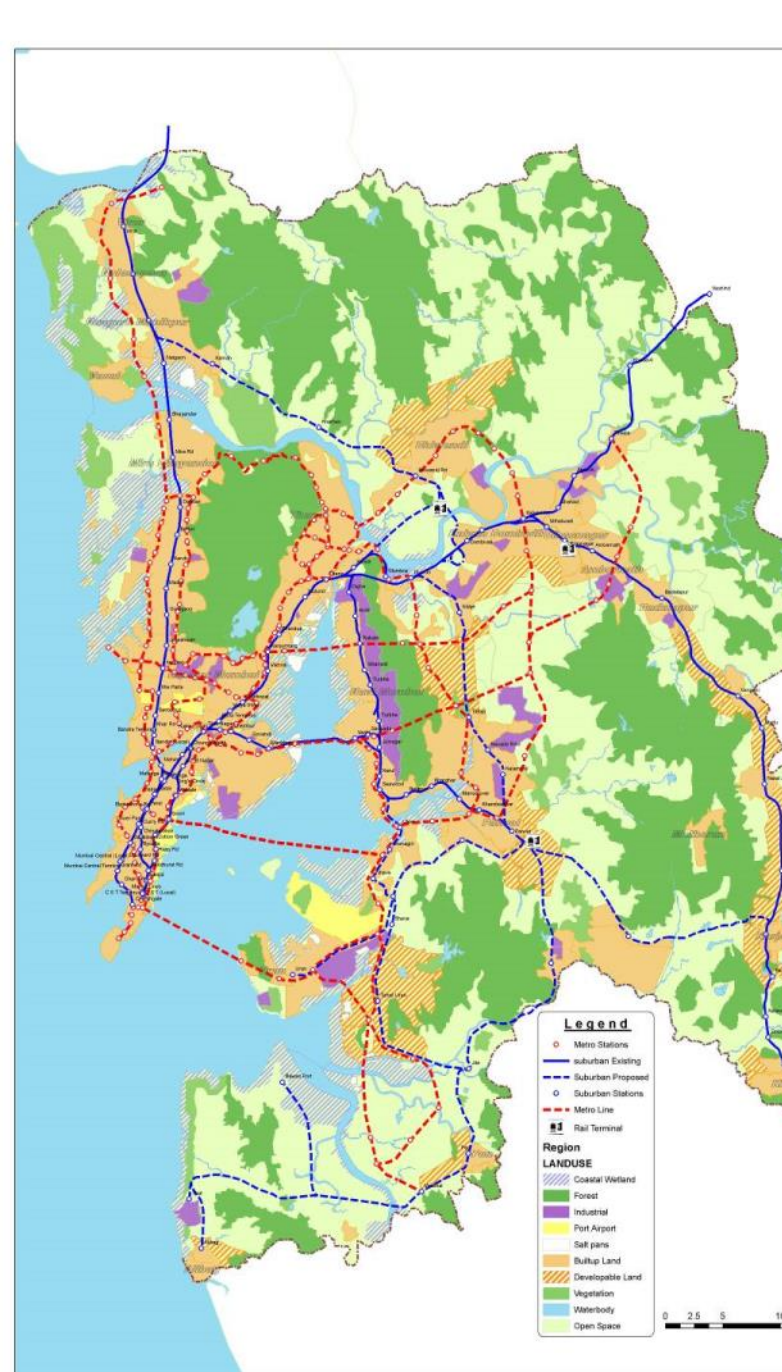
FSI has to be used in combination with lot coverage. Commercial and residential areas would have a different lot coverage for the same FSI

Effect on the bulk of buildings of variations of FSI and % lot coverage

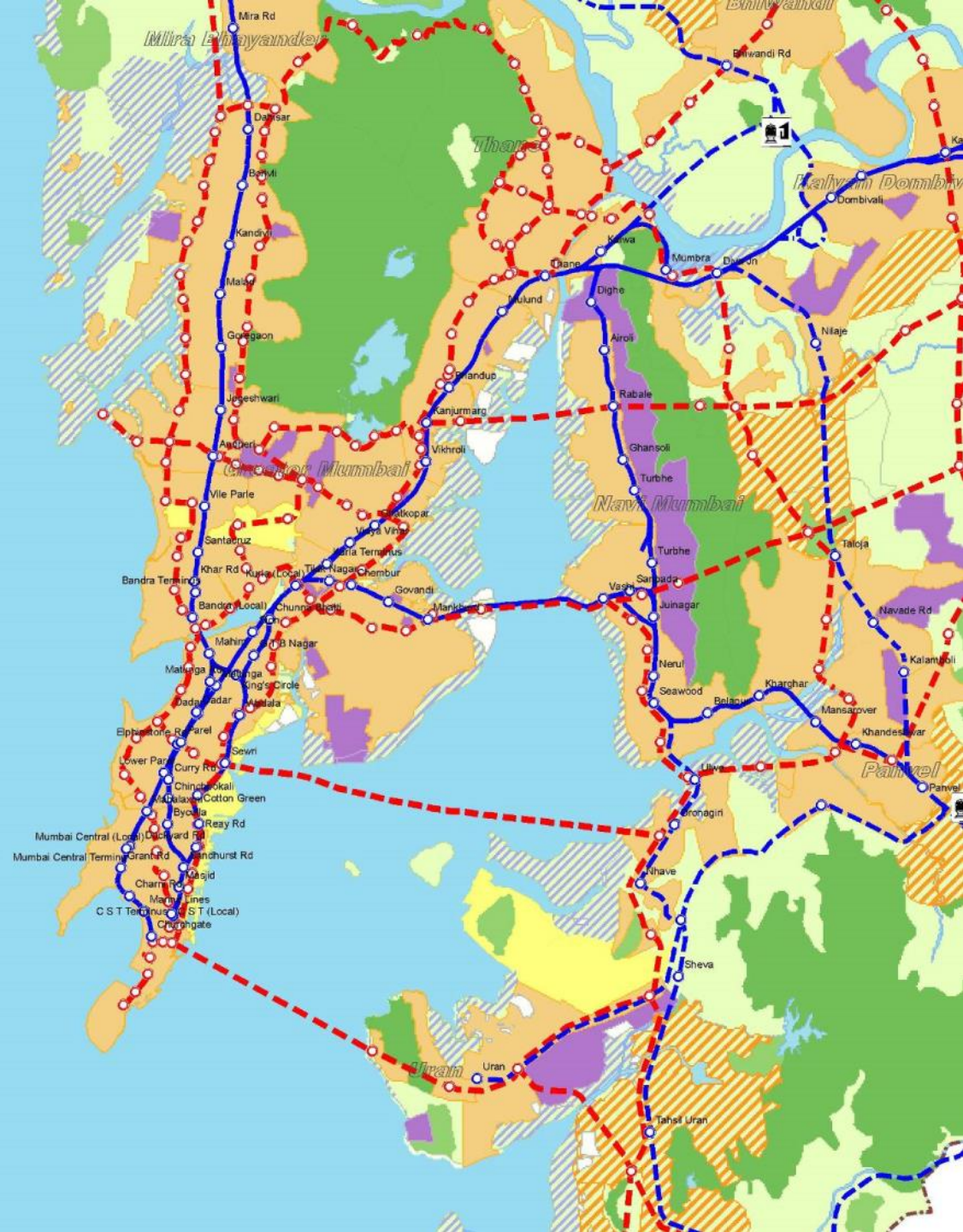
The drawing is at scale vertically and horizontally

Lots are 60 by 90 m. floor height is 3.25 m

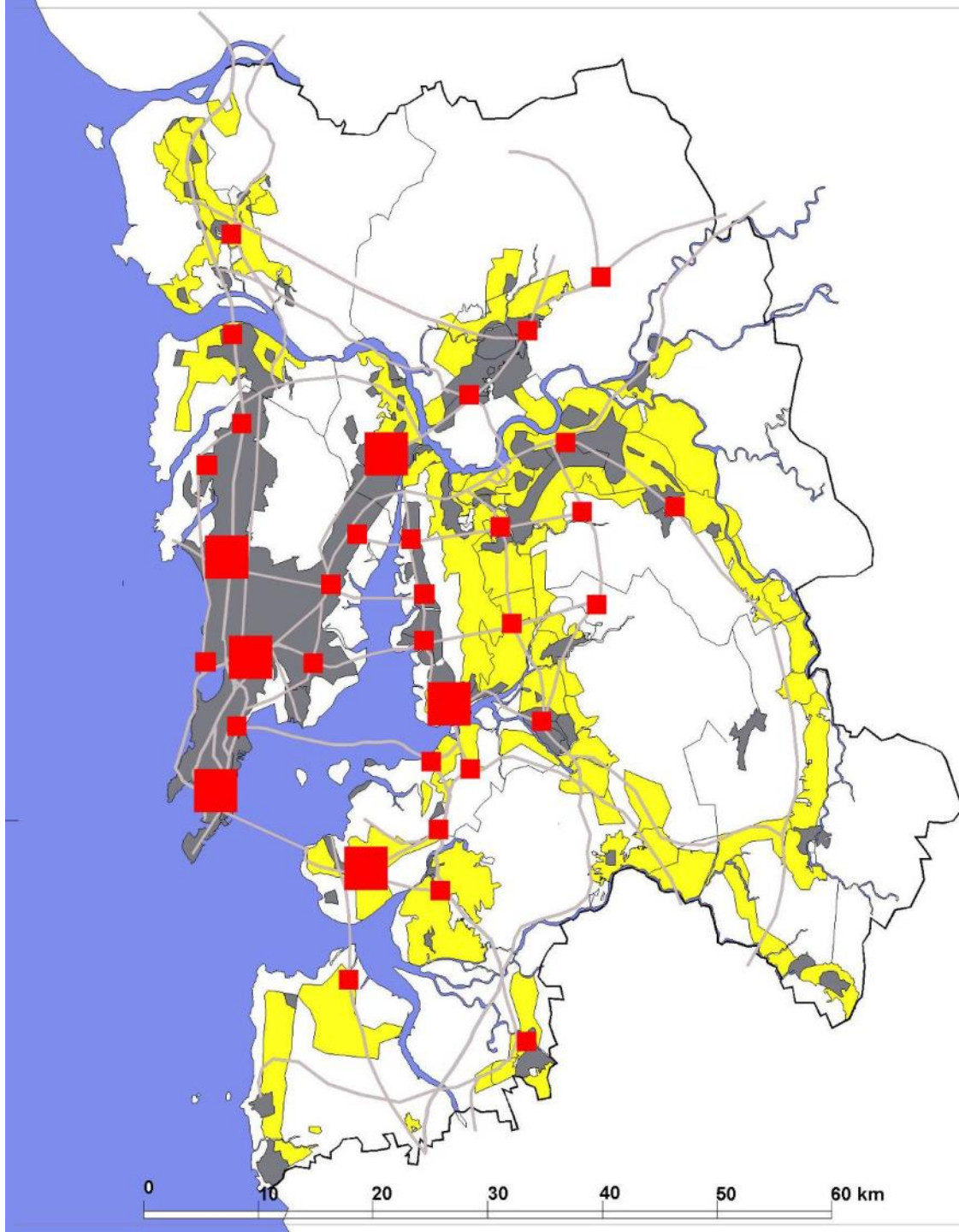




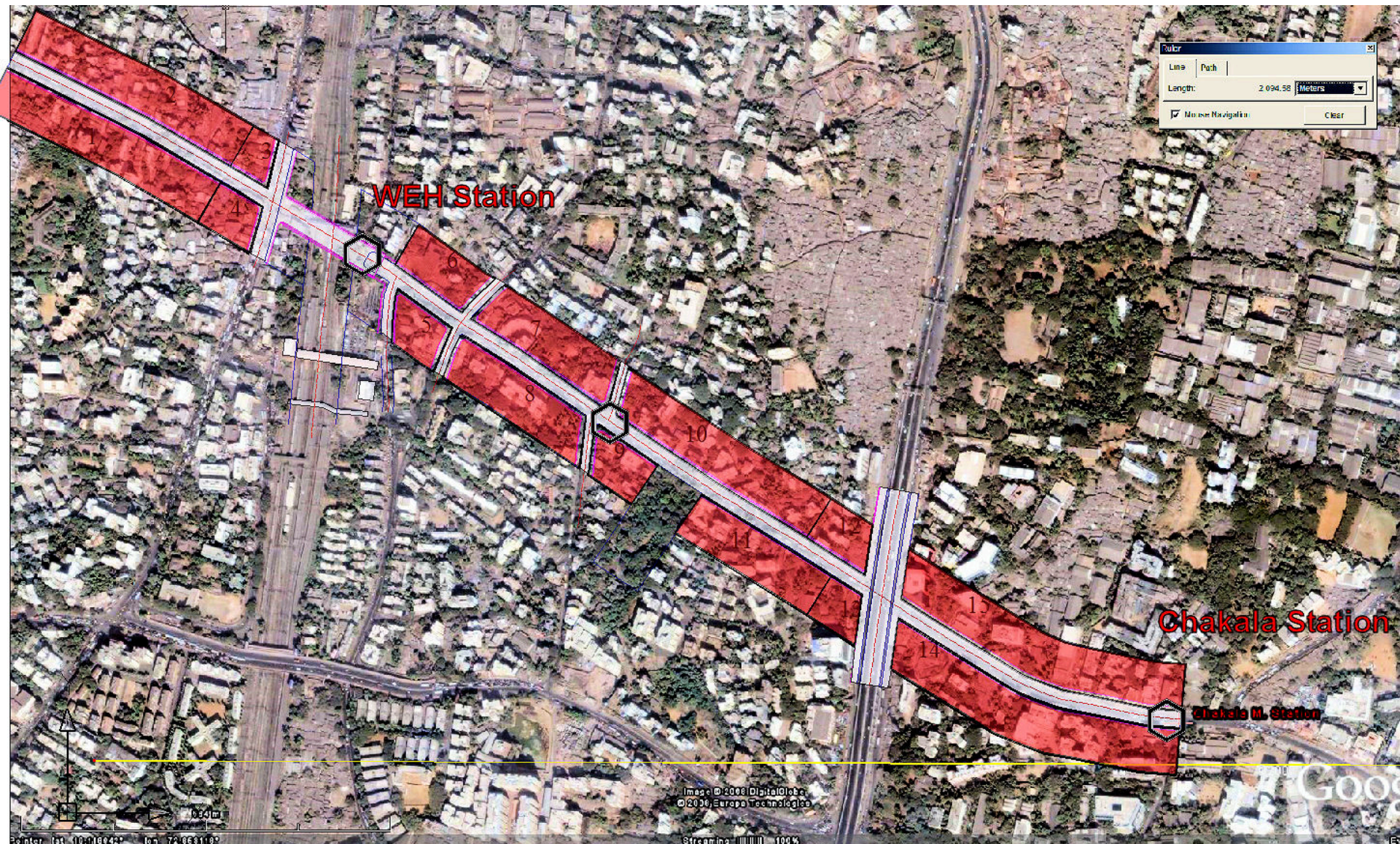
Rail & Metro Network - 2031



Selection of areas
where the FSI should
be increased

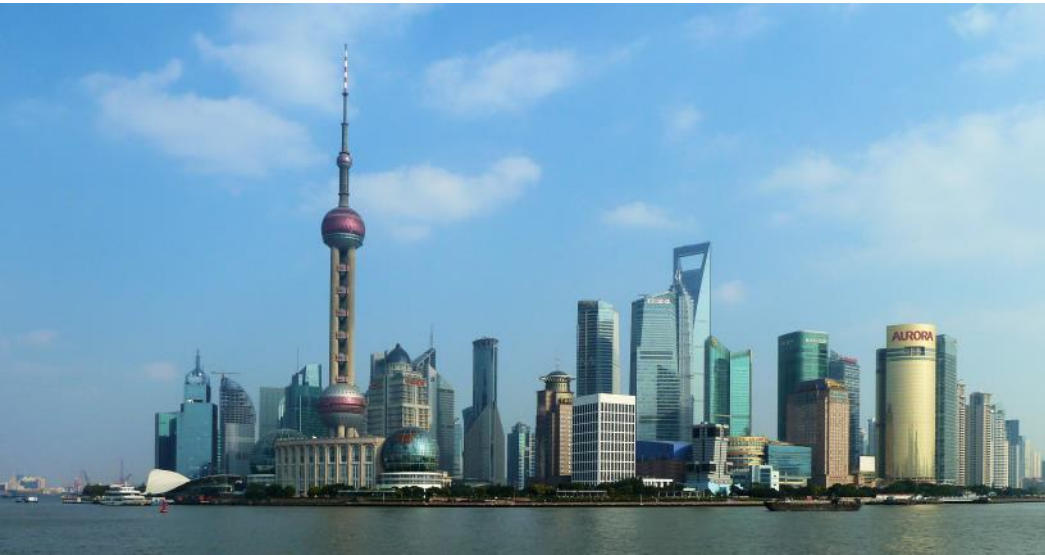


The incremental approach could consist in changing FSI values along the first planned metro line





- Bandra Kurla, Mumbai



- Pudong, Shanghai



- Downtown Manhattan₂₆