An-Najah National University
Faculty of Engineering
Urban Planning Department

Graduation Project 2
“ Urban Transportation Planning for Jenin City “

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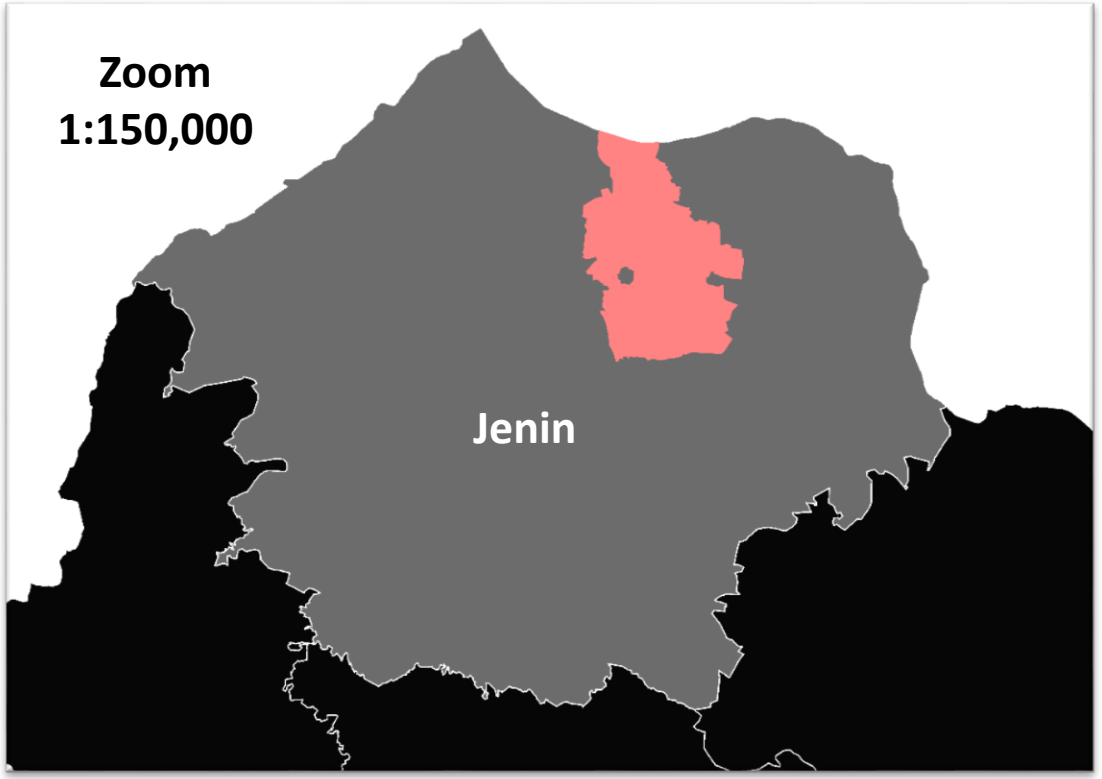
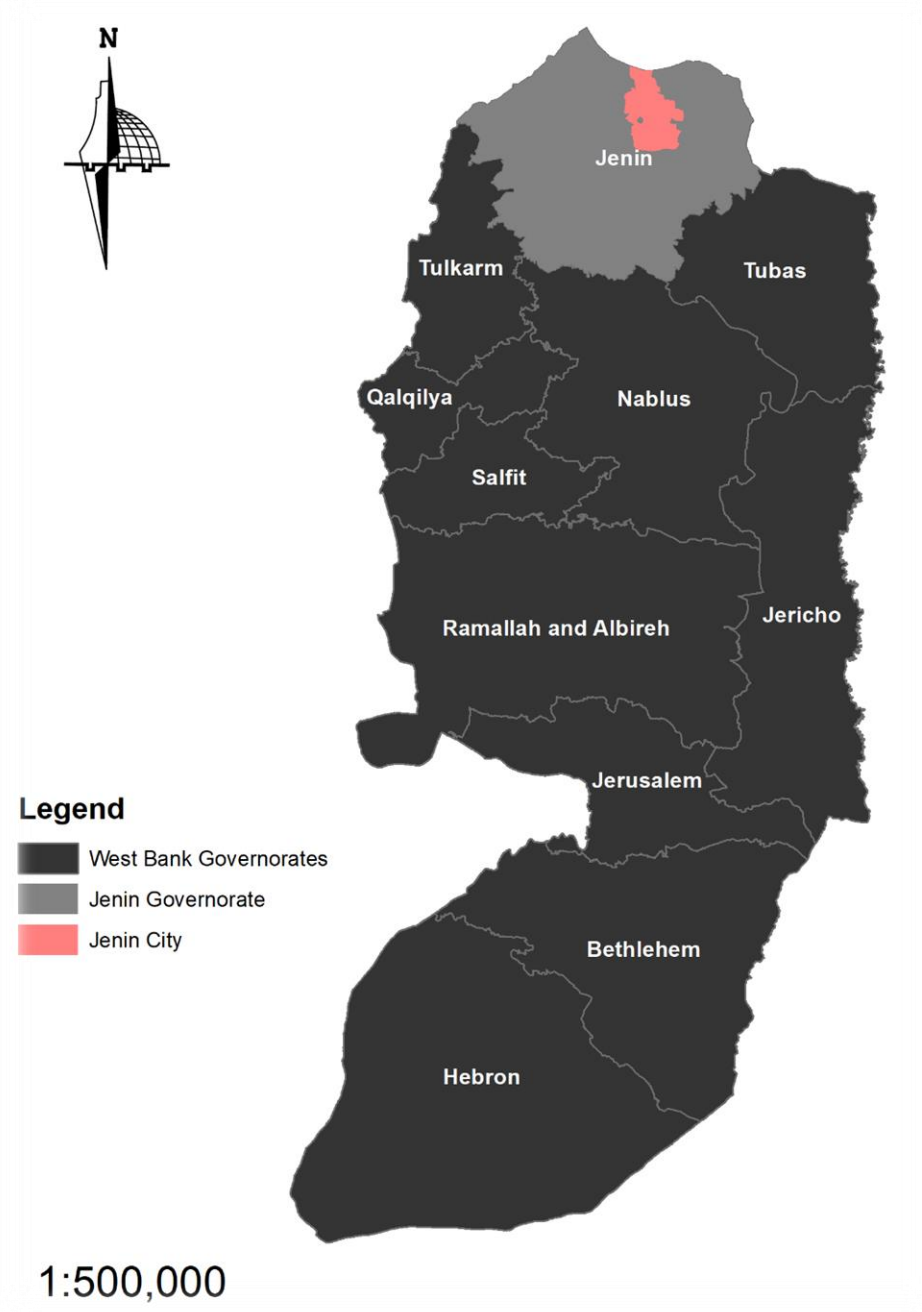
Study Area Diagnosis

Jenin city importance: "Why Jenin city for the project“

Jenin governorate & city location according to other West Bank governorates

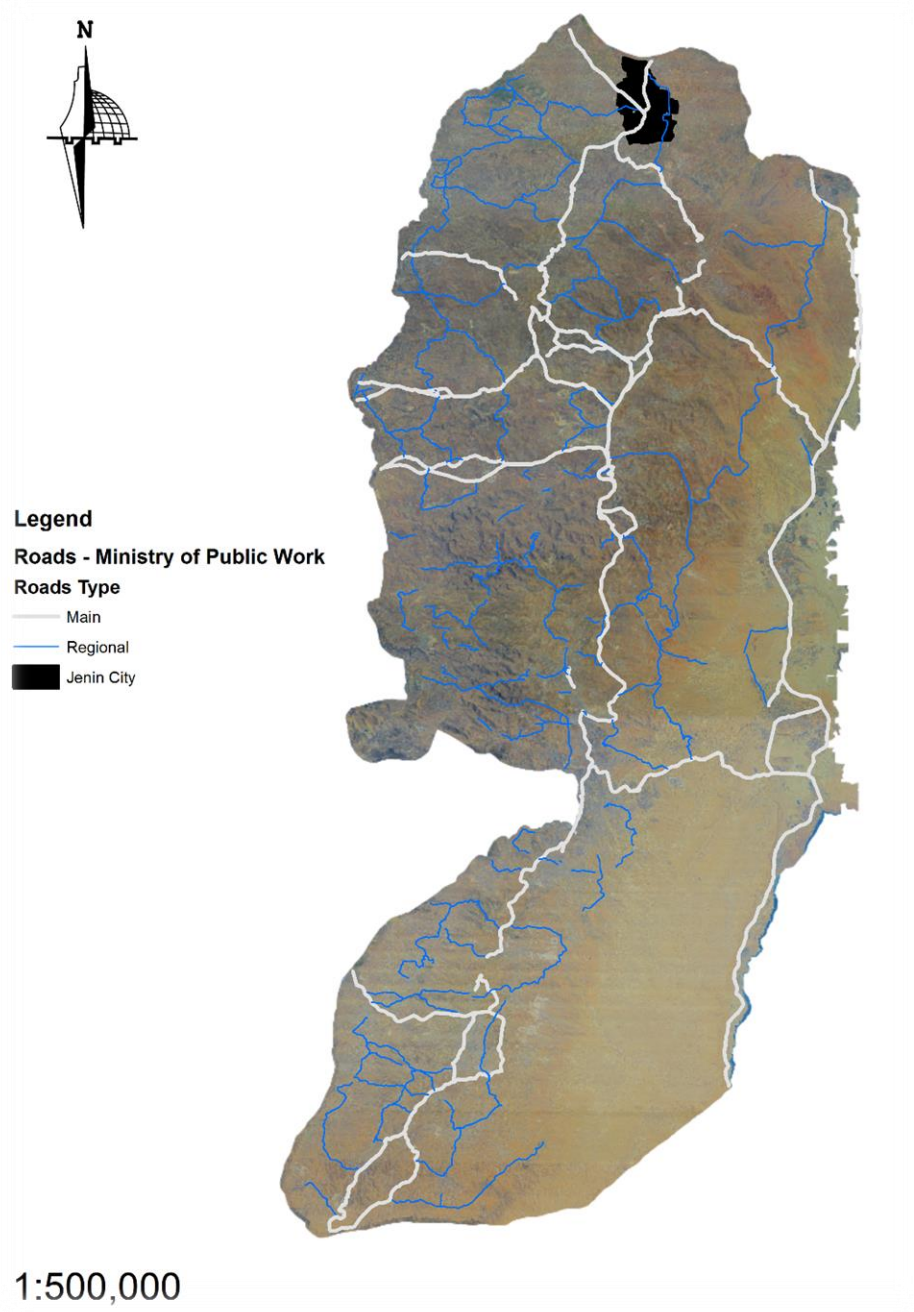




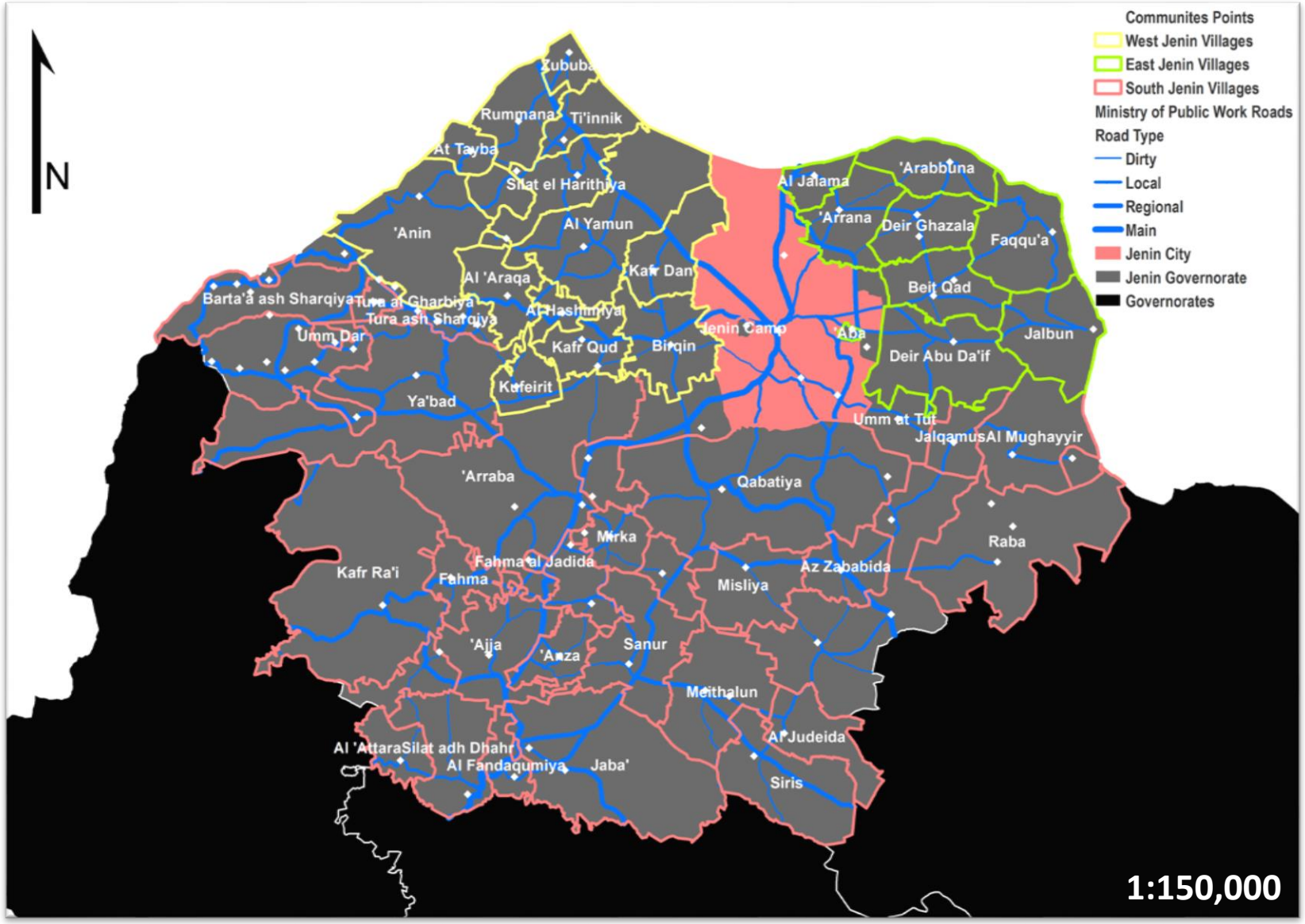
West bank governorates connected by main and regional roads " Jenin City location "

There is a main road linking Jenin city with Nablus city This is a positive point for the governorate, where it is easy to reach the regional center for the northern West Bank

Note: This Classification by Ministry of Public Work

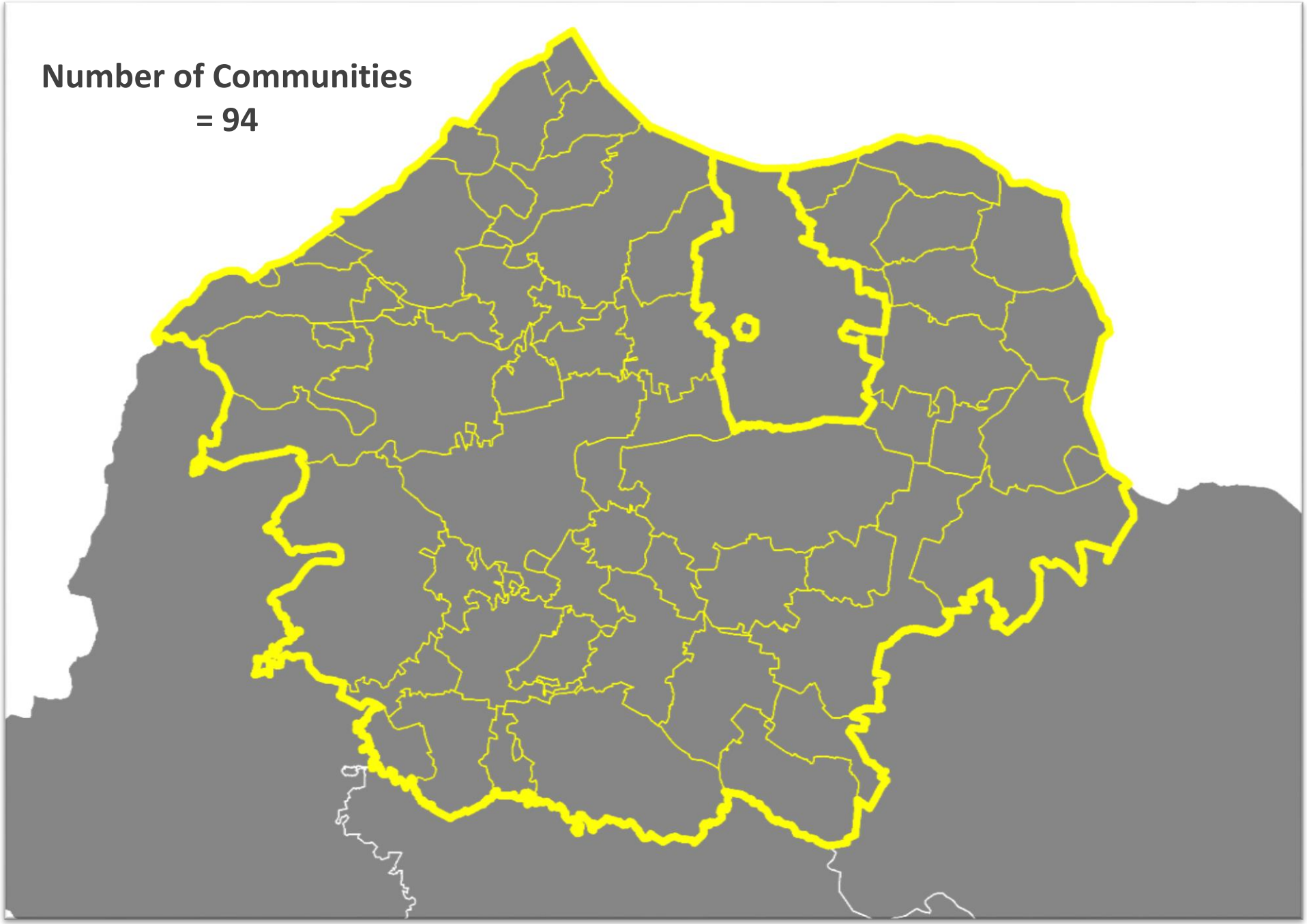


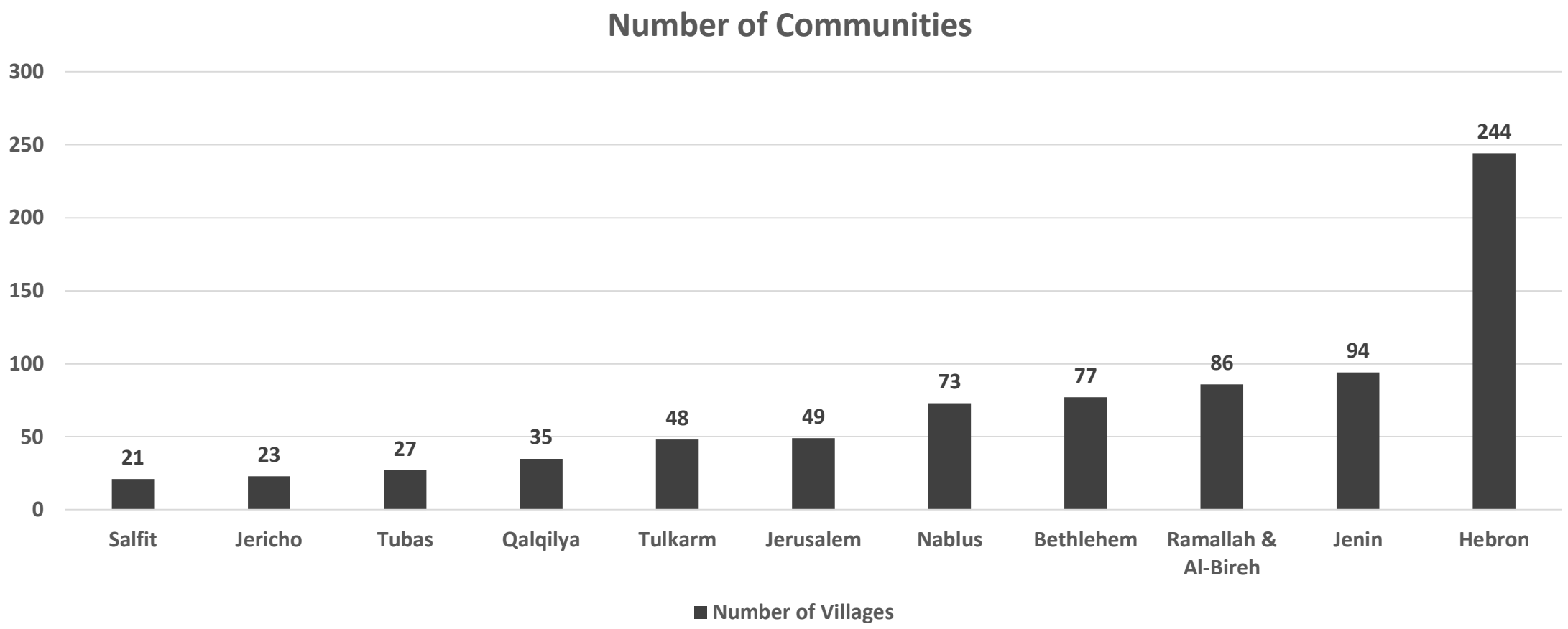
Communities that connected to Jenin city

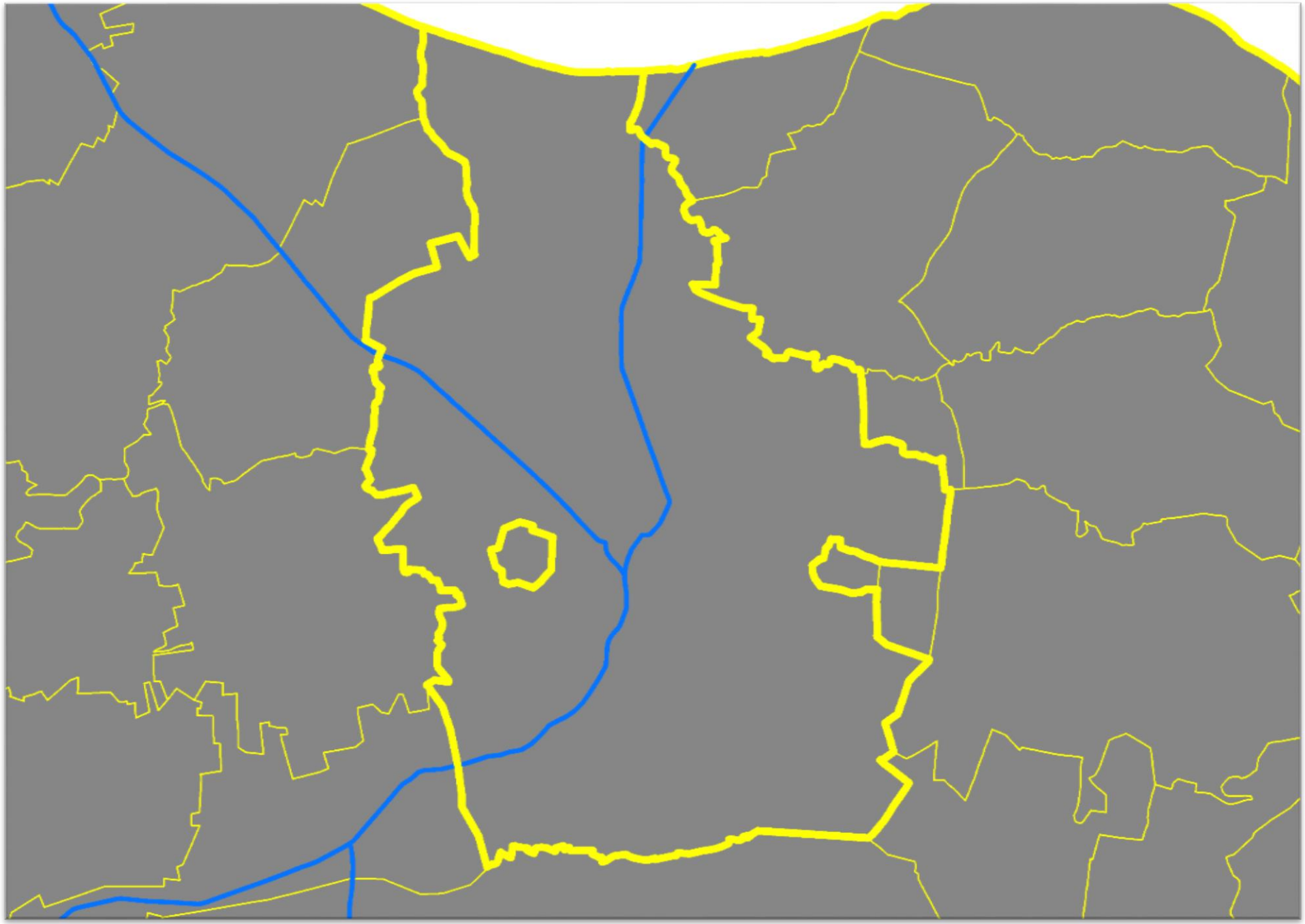


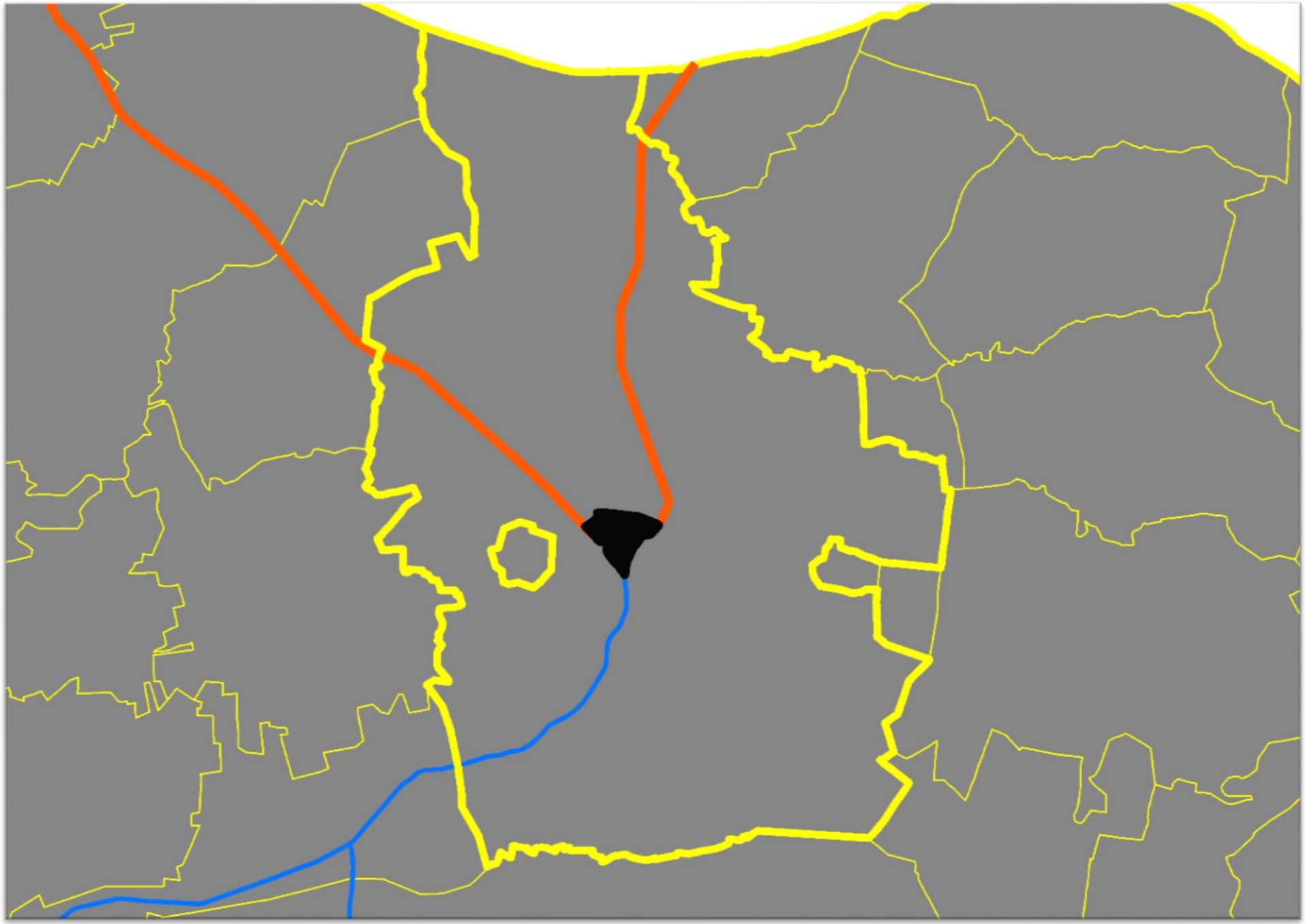
Why Jenin City for the Project

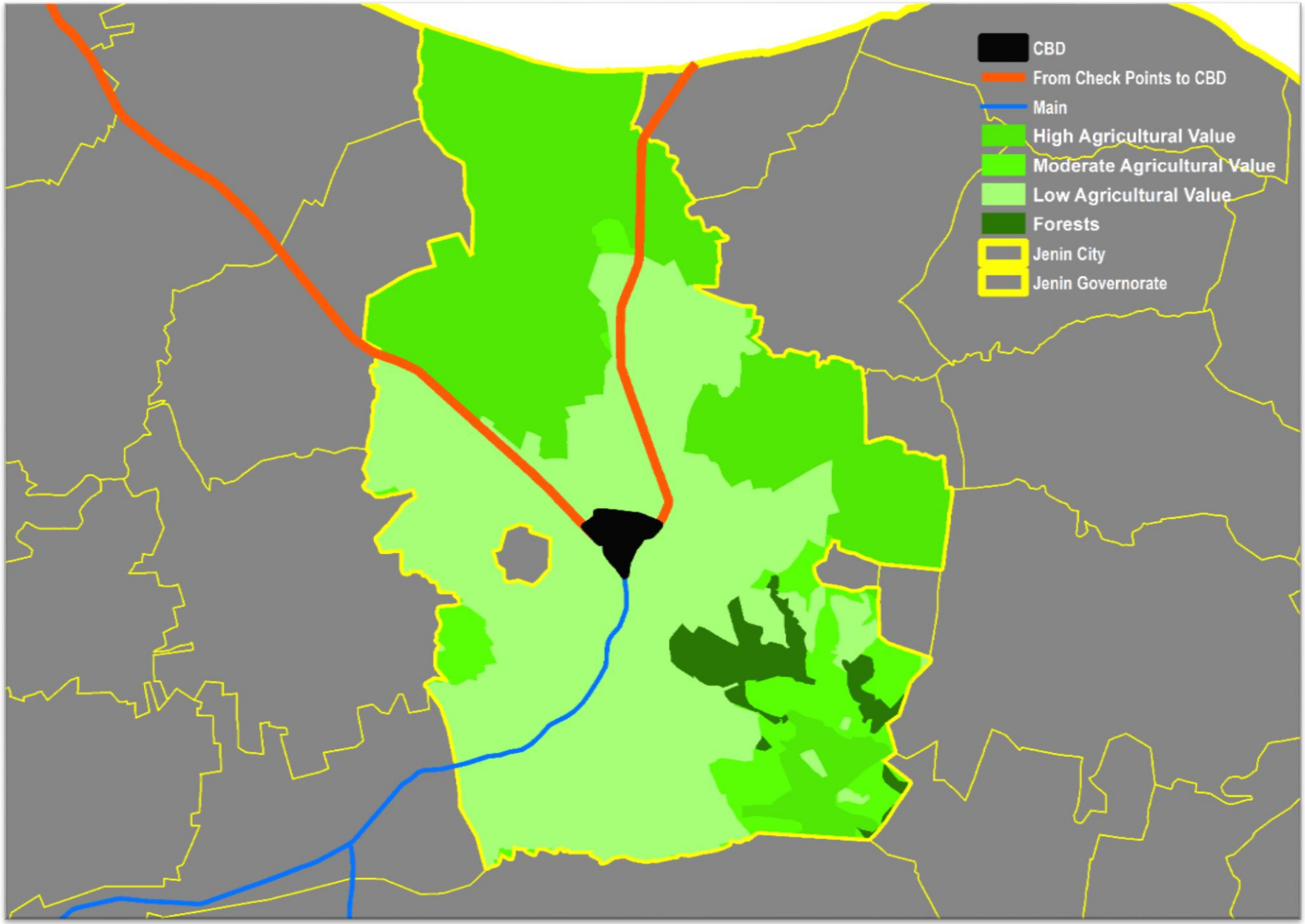
The Importance of The Geographical Location of The City of Jenin


Number of Communities
= 94


Number of Communities
300
250
200
150
100
50
0
21
23
27
35
48
49
73
77
86
94
244
Salfit
Jericho
Tubas
Qalqilya
Tulkarm
Jerusalem
Nablus
Bethlehem
Ramallah & Al-Bireh
Jenin
Hebron
Number of Villages

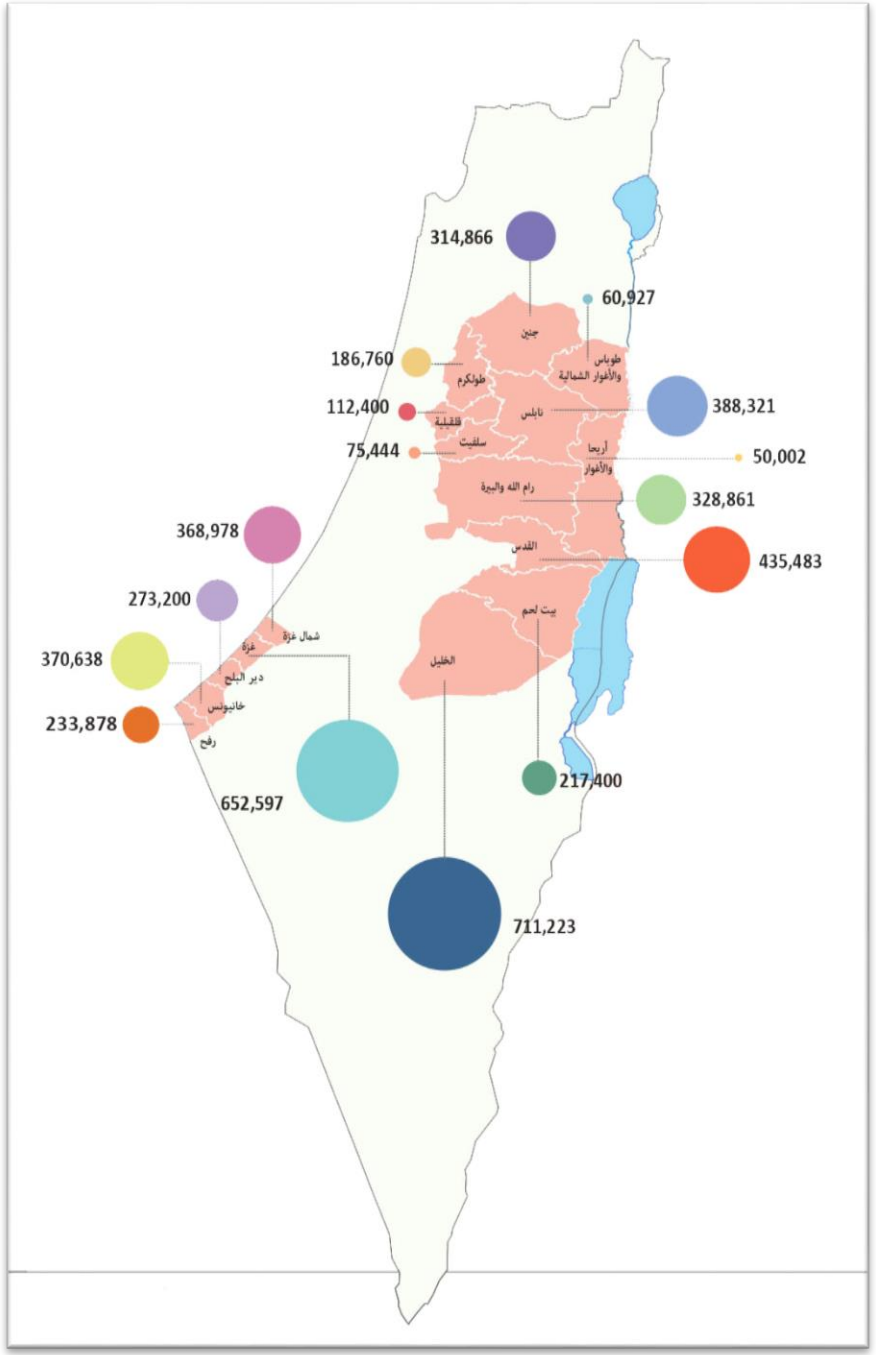





CBD
From Check Points to CBD
Main
High Agricultural Value
Moderate Agricultural Value
Low Agricultural Value
Forests
Jenin City
Jenin Governorate

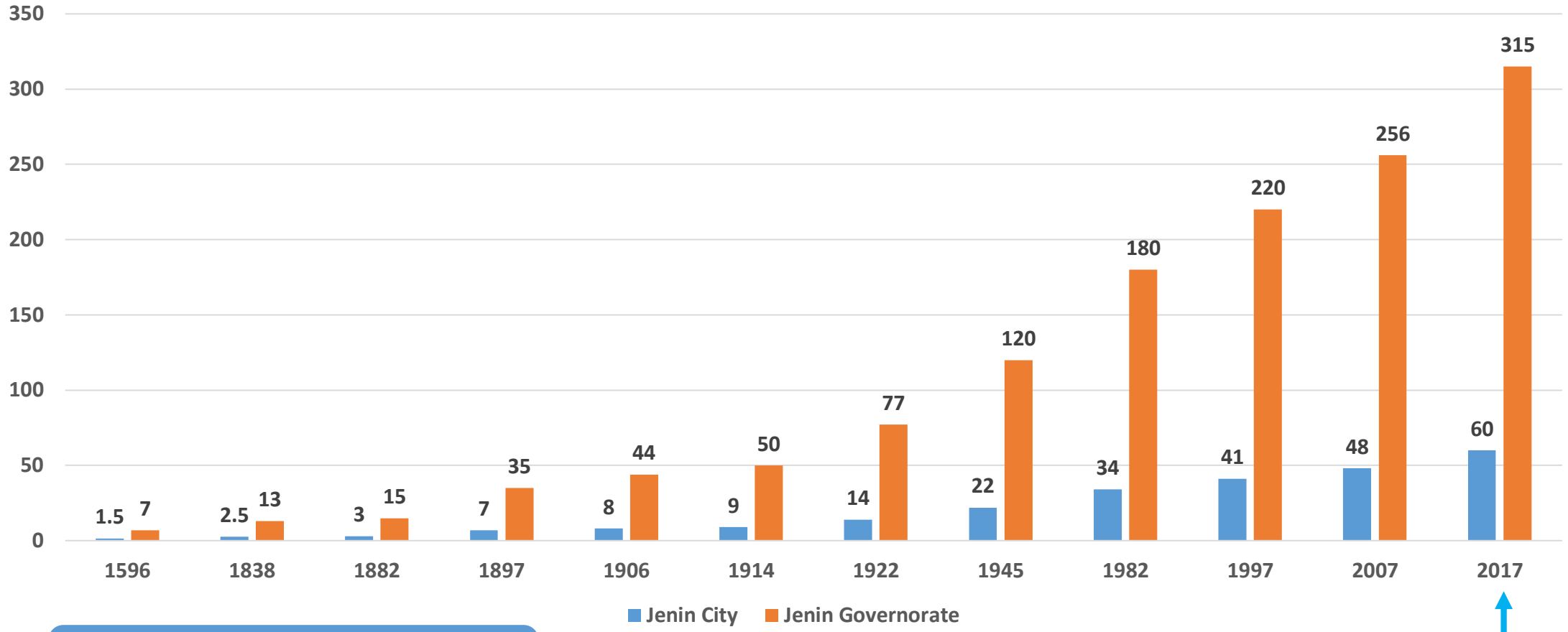
Population Density and Construction is increasing dramatically

Urban Sprawl of Jenin City



Fourth highest governorate in terms of population after Hebron, Jerusalem and Nablus

1997= 6.1 → 2007= 5.5 → 2017= 5.1

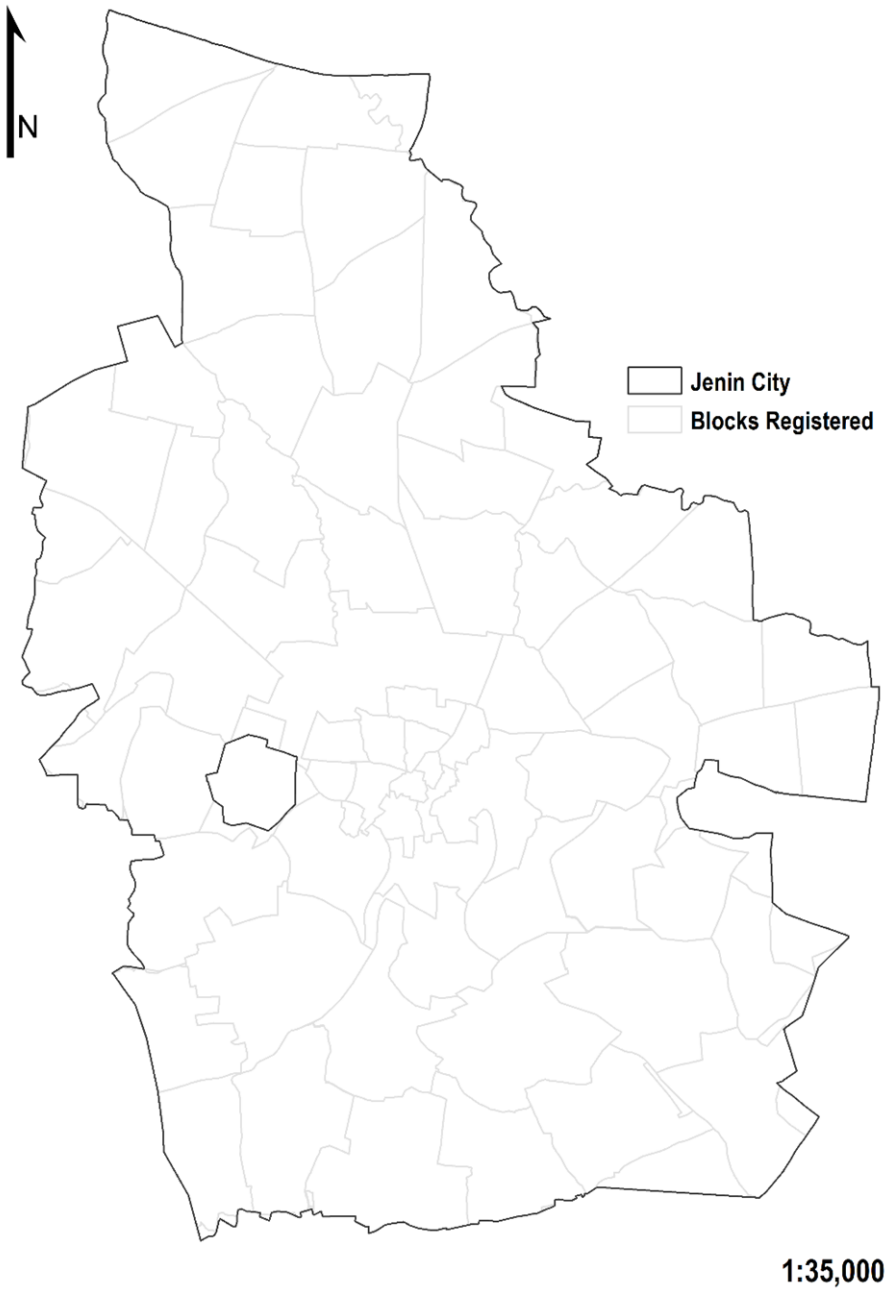


Growth rate= 2.5

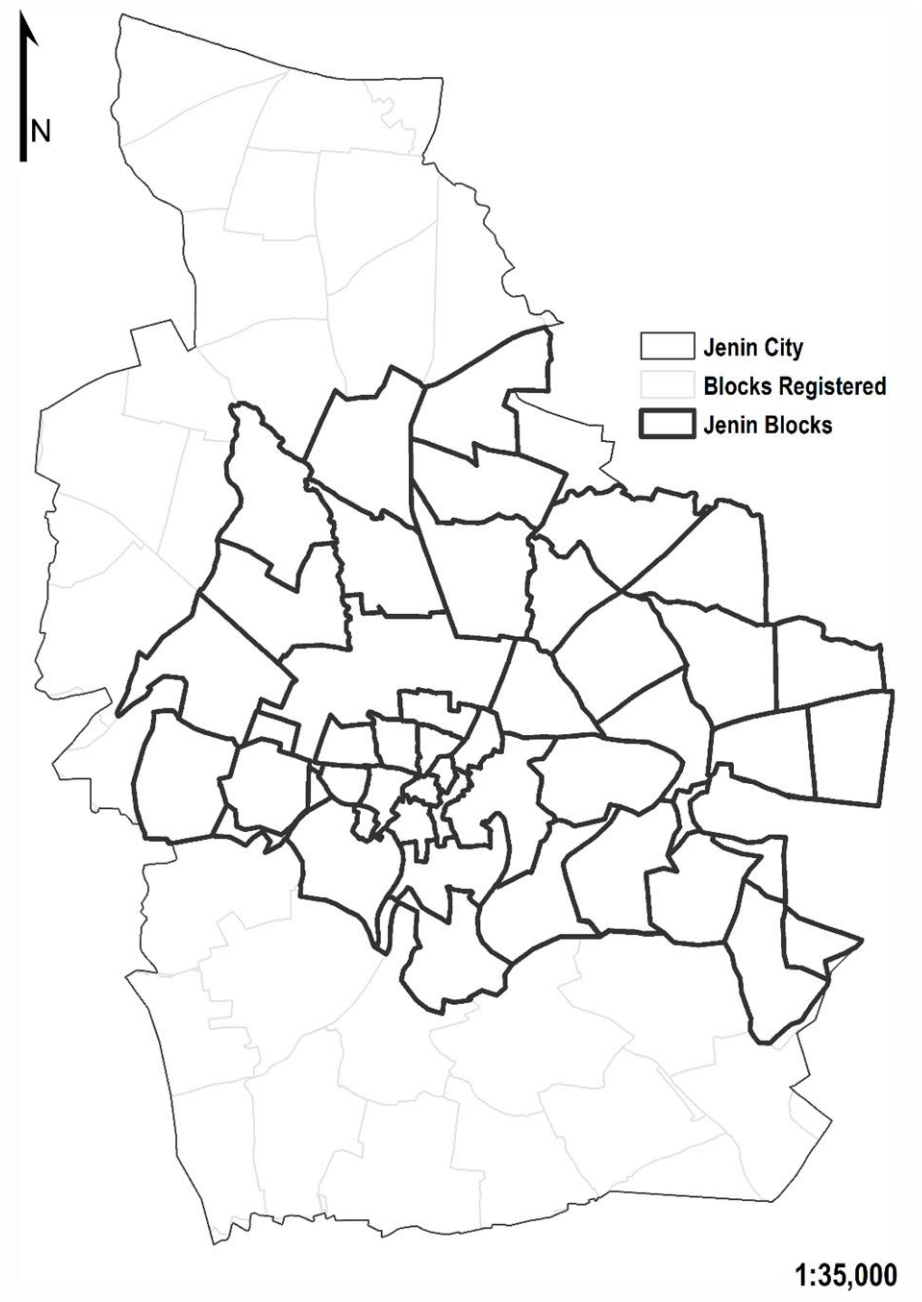
Jenin City & Jenin Camp

- Al-Sibat (Old Town) 1800
- West Neighborhood 1920
- Jenin Camp 1948
- East Neighborhood 1950
- German Neighborhood & Wad Burqin 1960
- Al-Zahra Neighborhood & Al-Bsatin Neighborhood
- Kharouba Neighborhood & Aljabriat Neighborhood & Al-Switat Neighborhood & Sabah Al-khair Neighborhood
- Qabatya Blocks & 3 Main Roads Sprawl

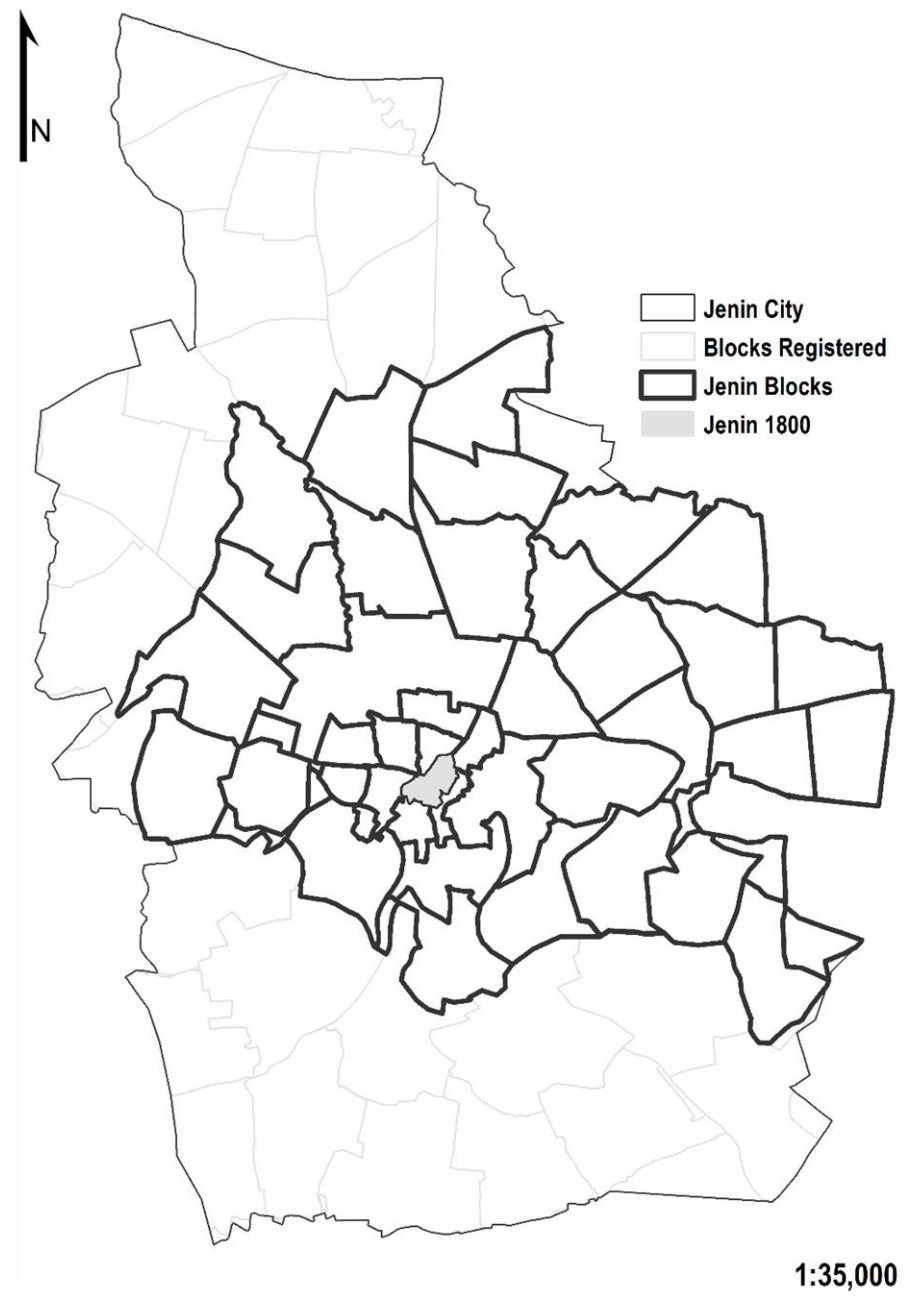
Community Administrative Boundary



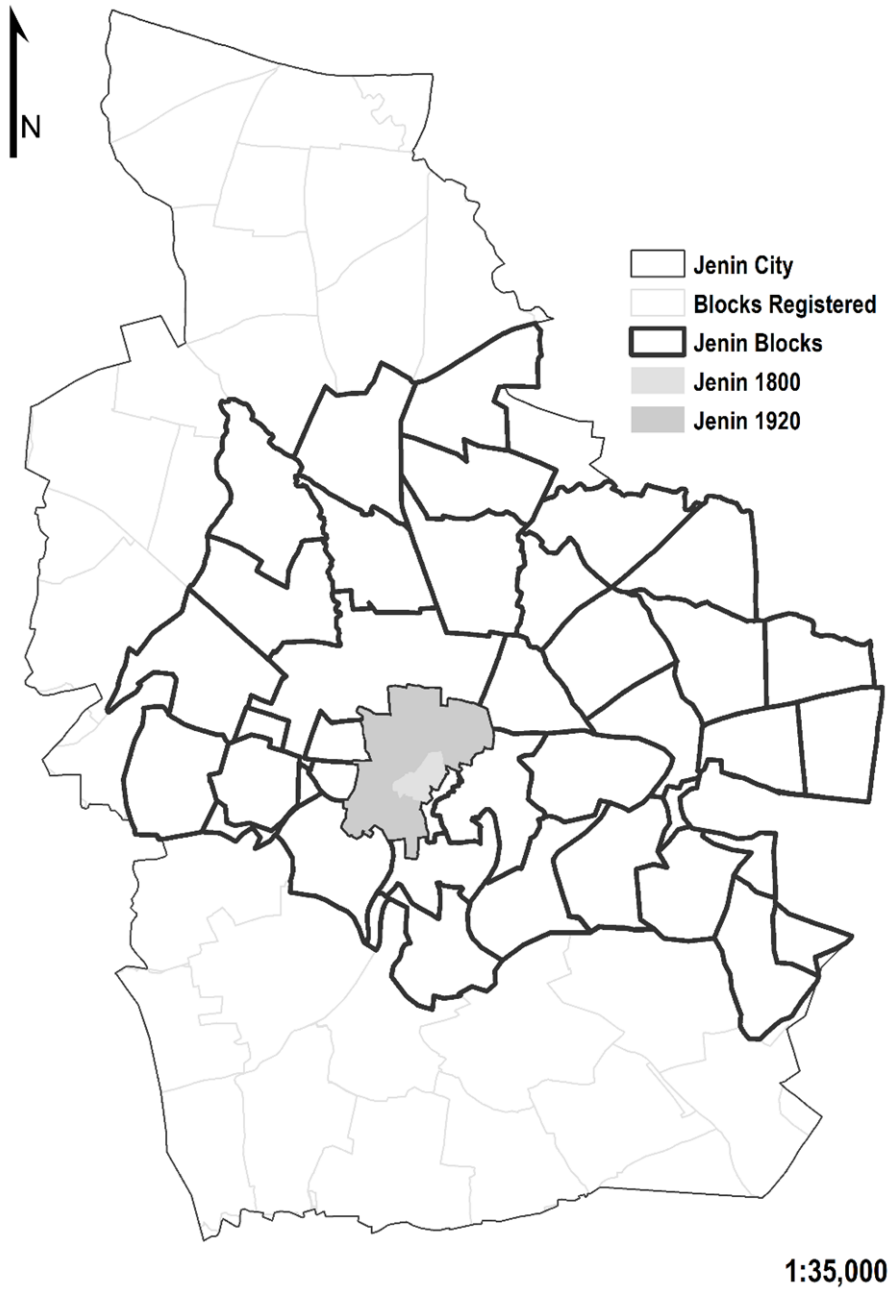
Blocks Registered



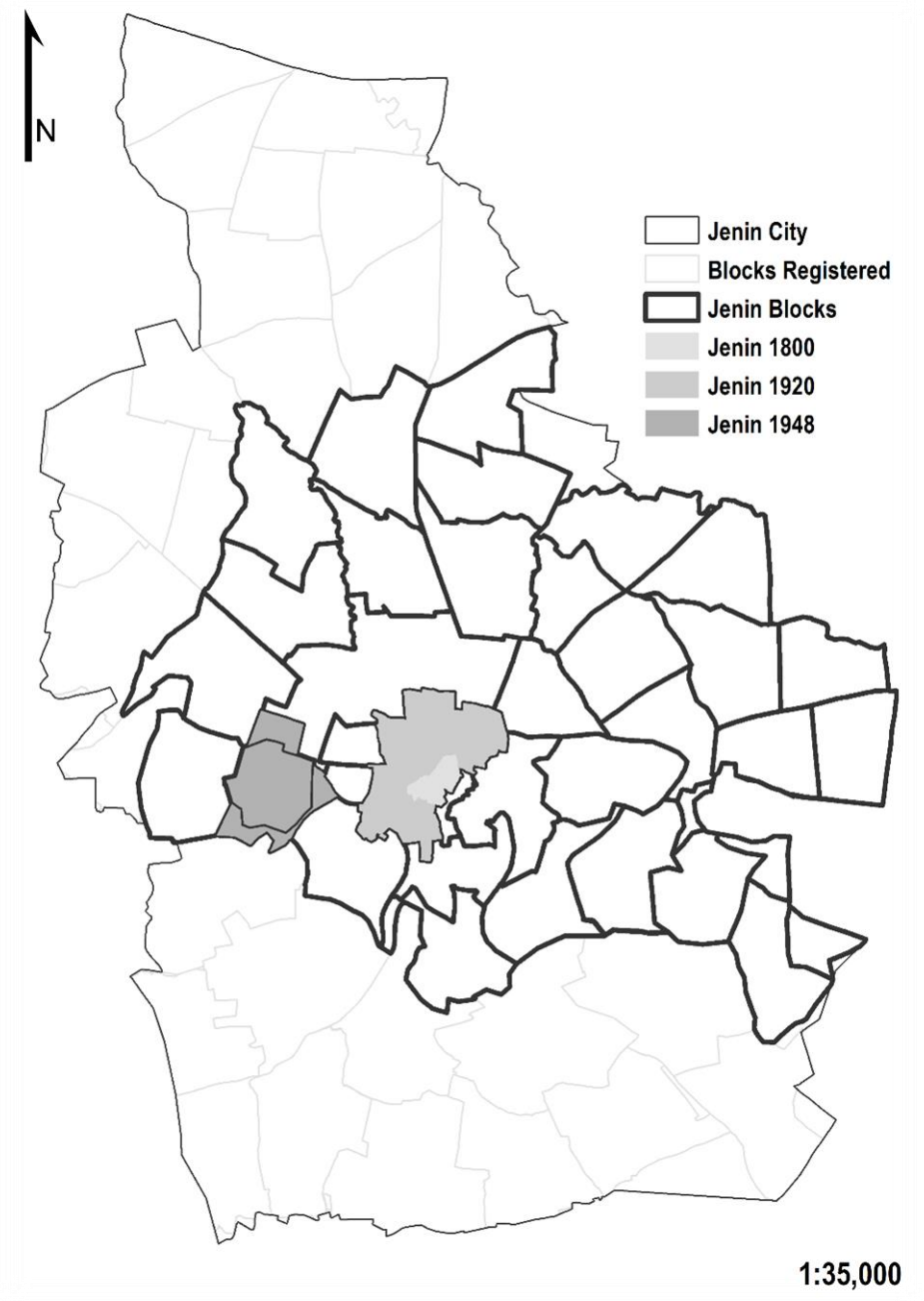
Blocks belonging to the Municipality of Jenin



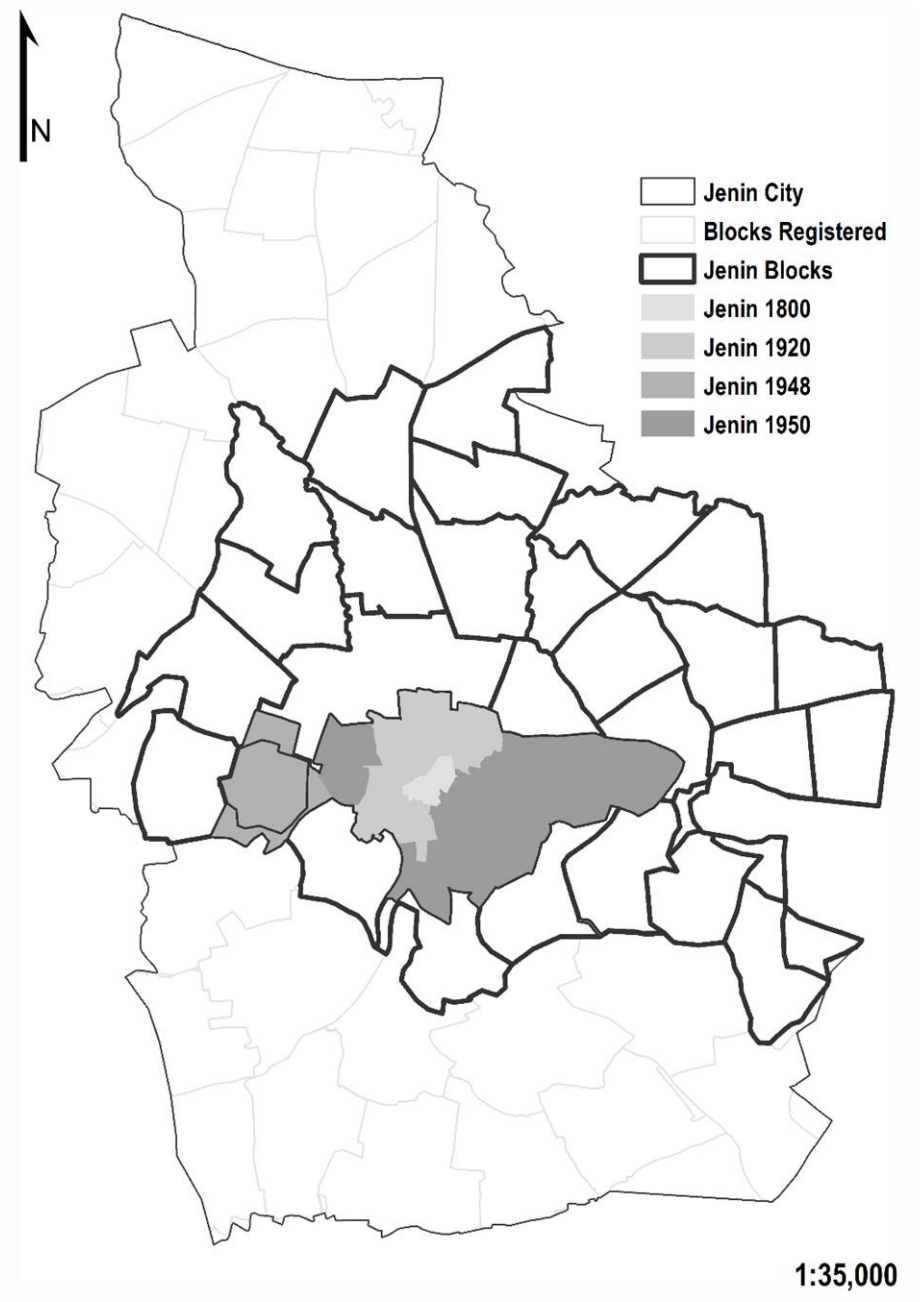
Al-Sibat (Old Town) 1800



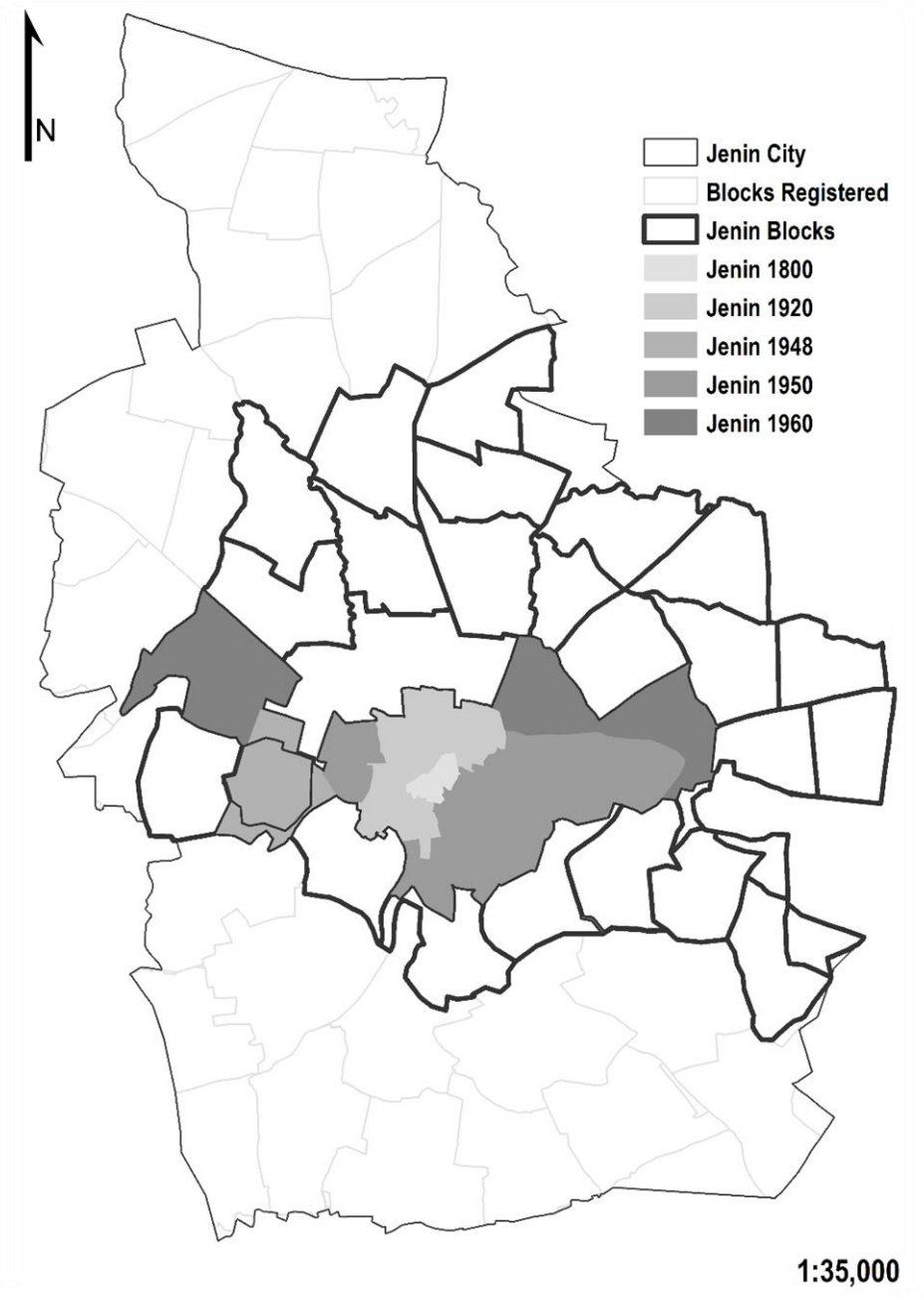
West Neighborhood 1920



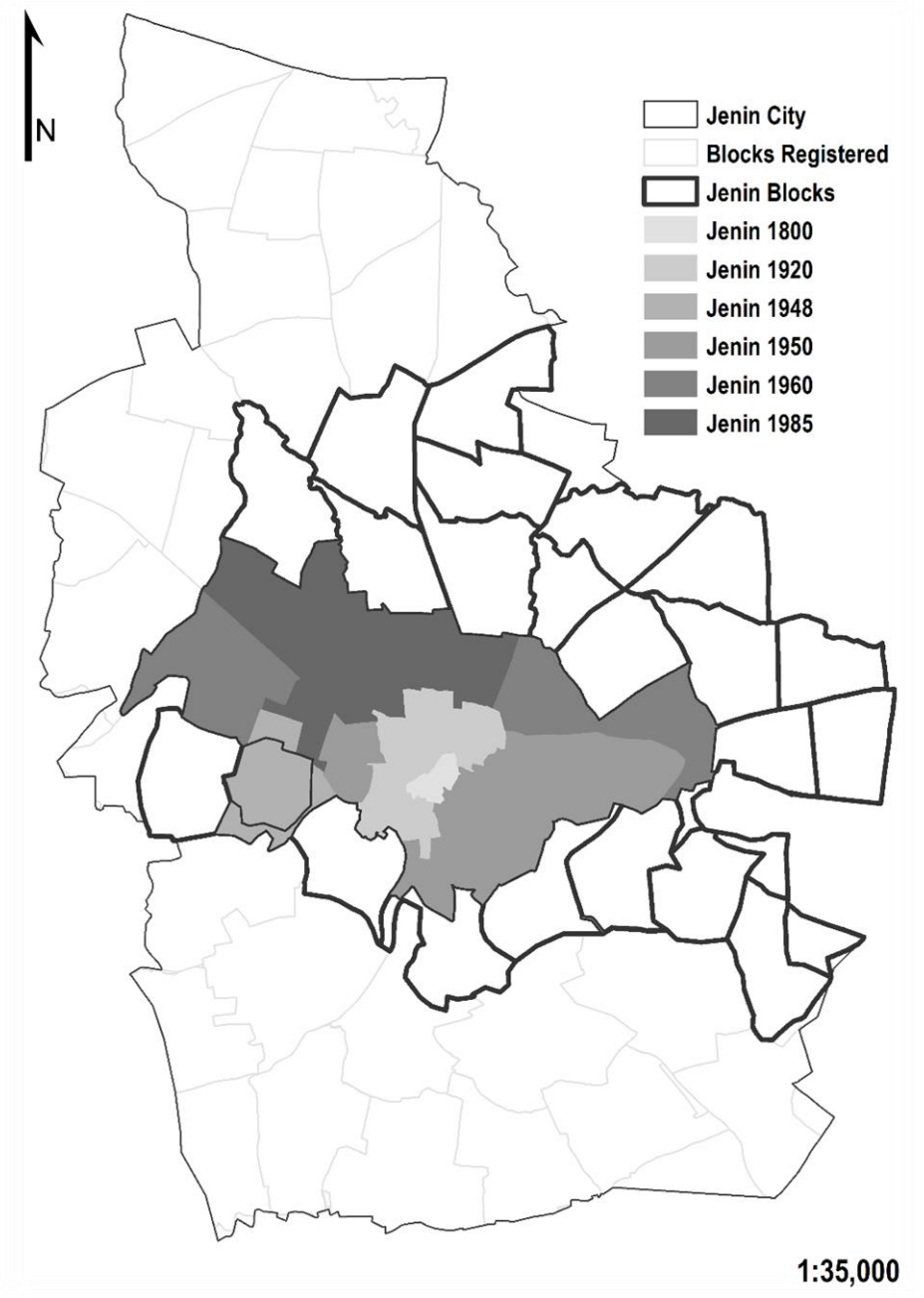
Jenin Camp 1948



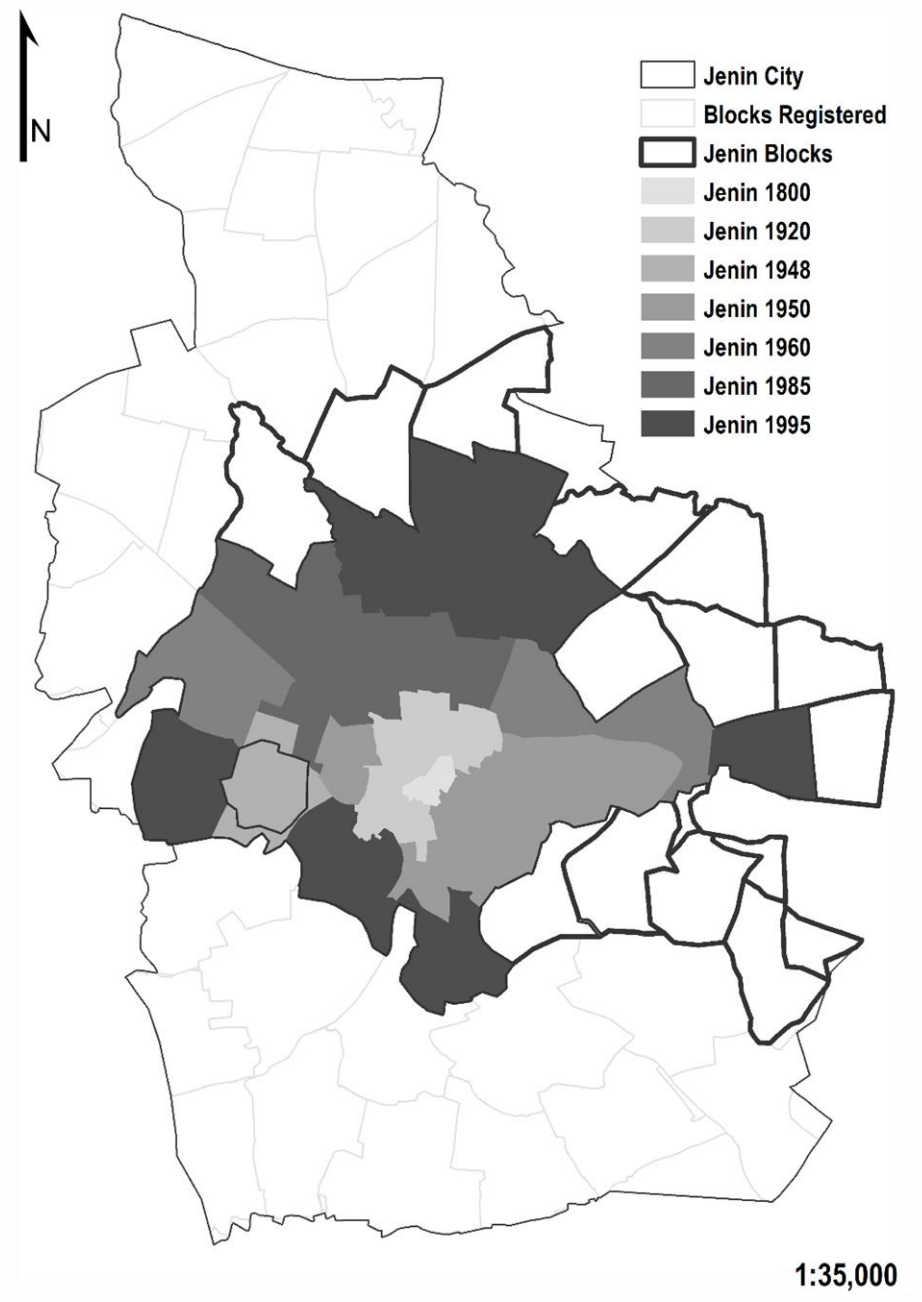
East Neighborhood 1950



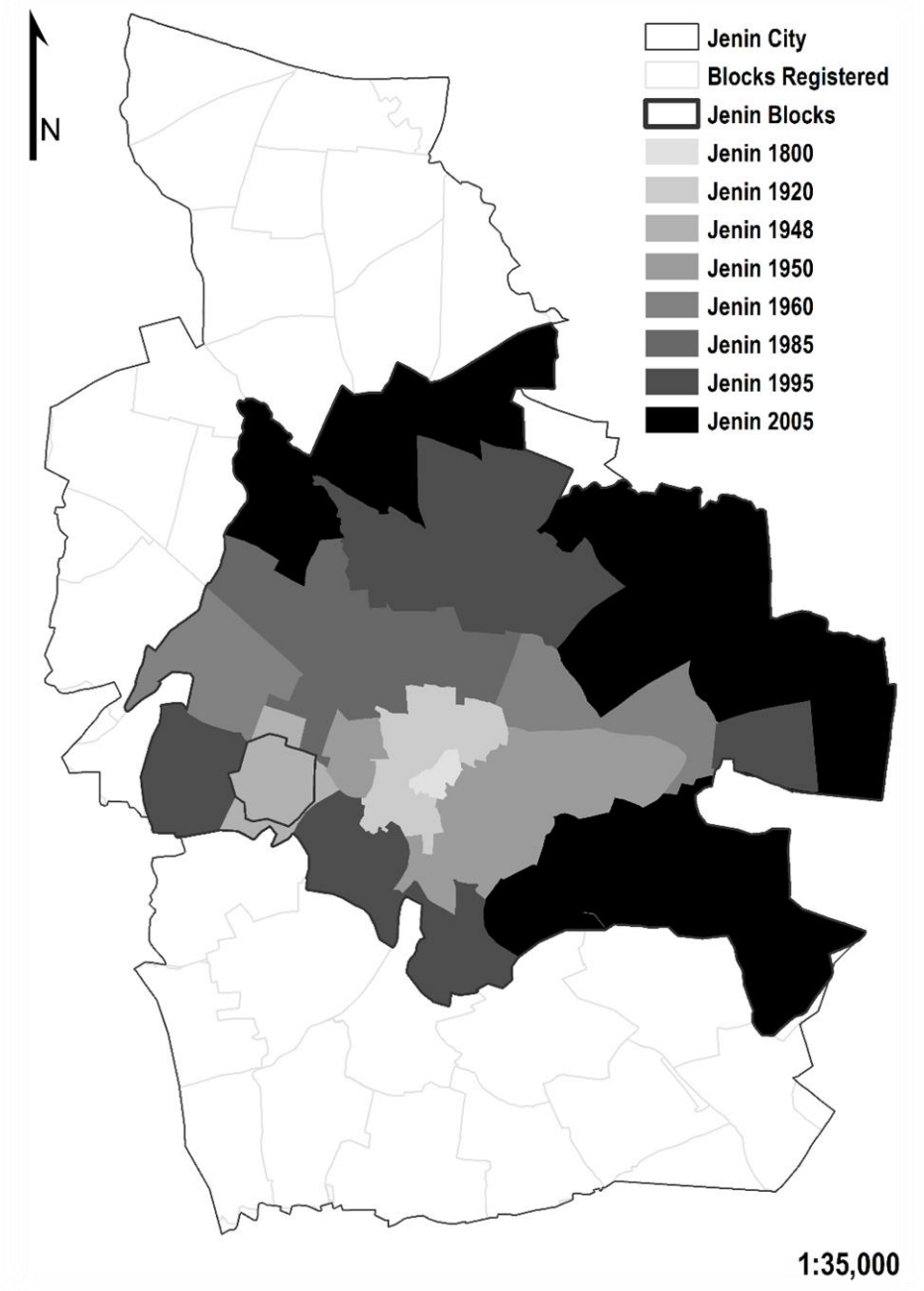
German Neighborhood & Wad Burqin 1960



Al-Zahra Neighborhood & Al-Bsatin Neighborhood

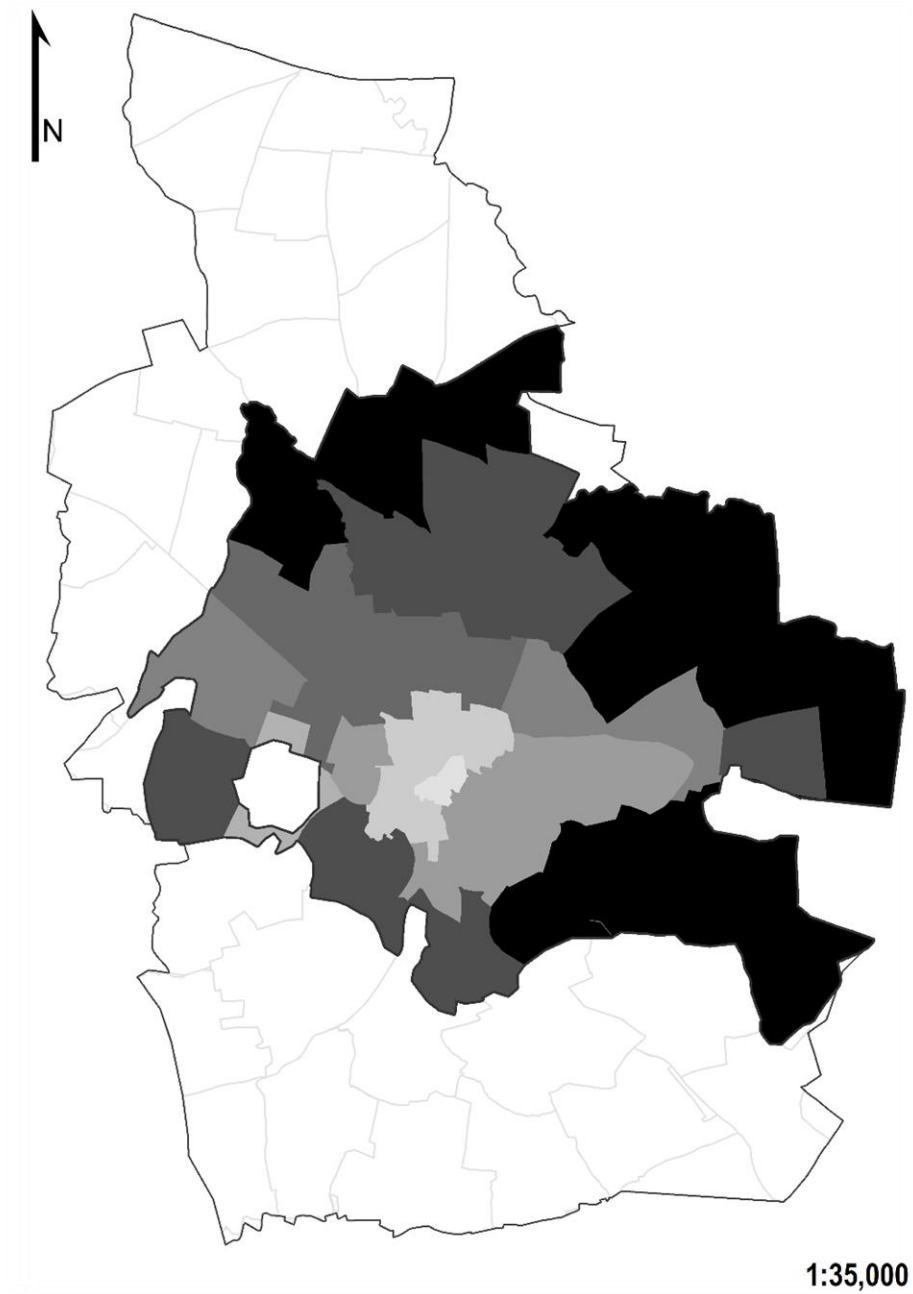


Kharouba Neighborhood & Aljabriat Neighborhood & Al-Switat Neighborhood & Sabah Al-khair Neighborhood



Qabatya Blocks & 3 Main Roads Sprawl

Historical development of Roads and Buildings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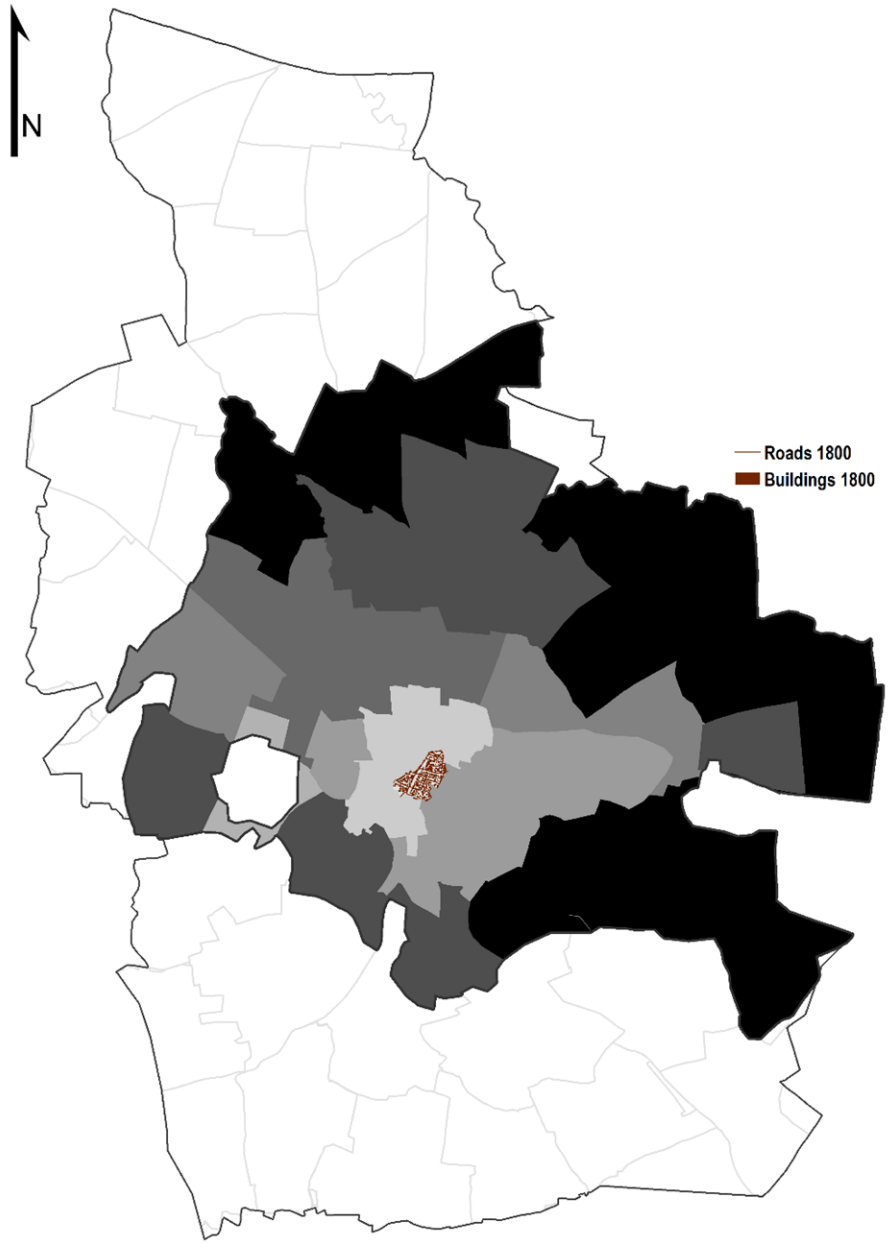

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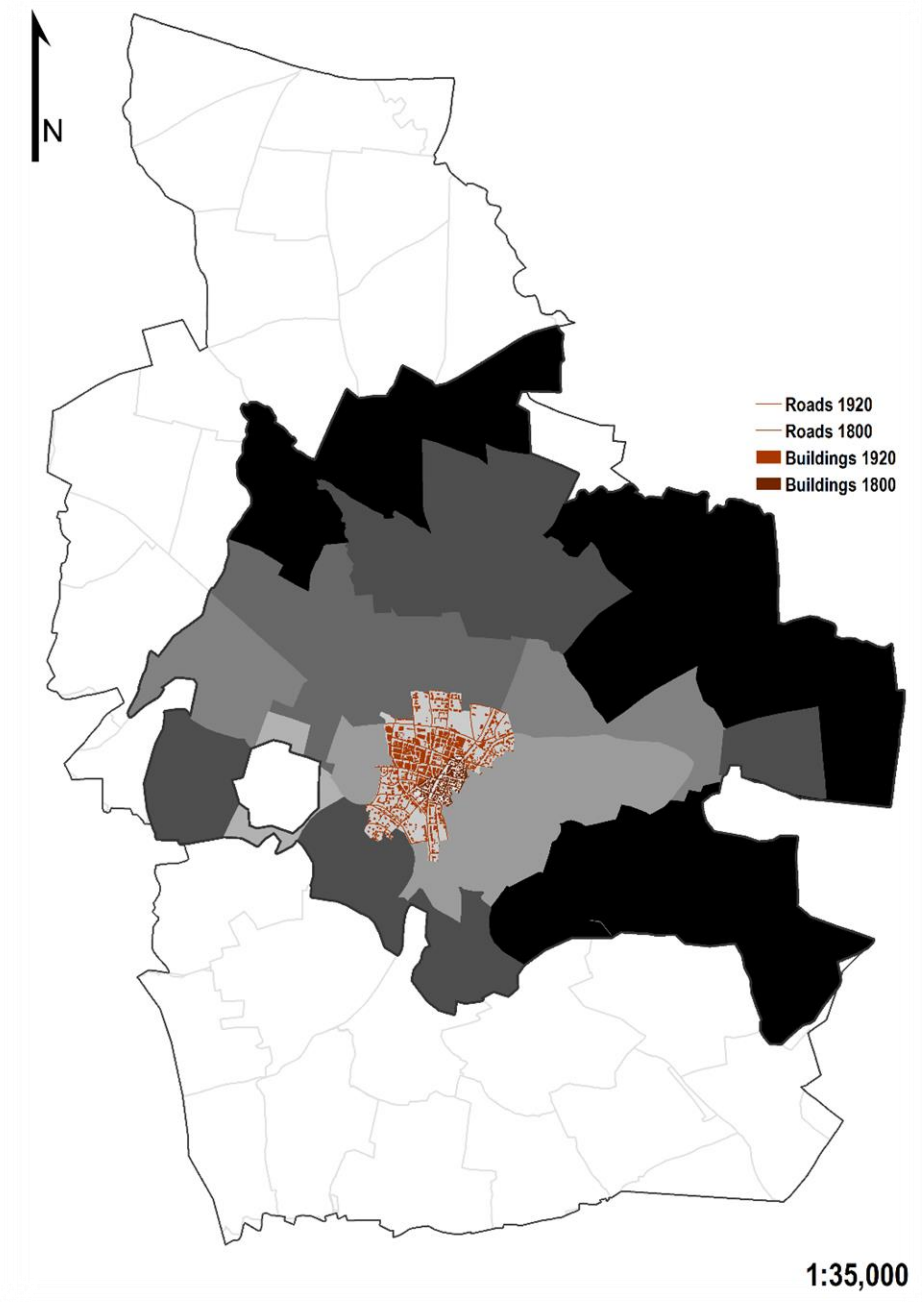
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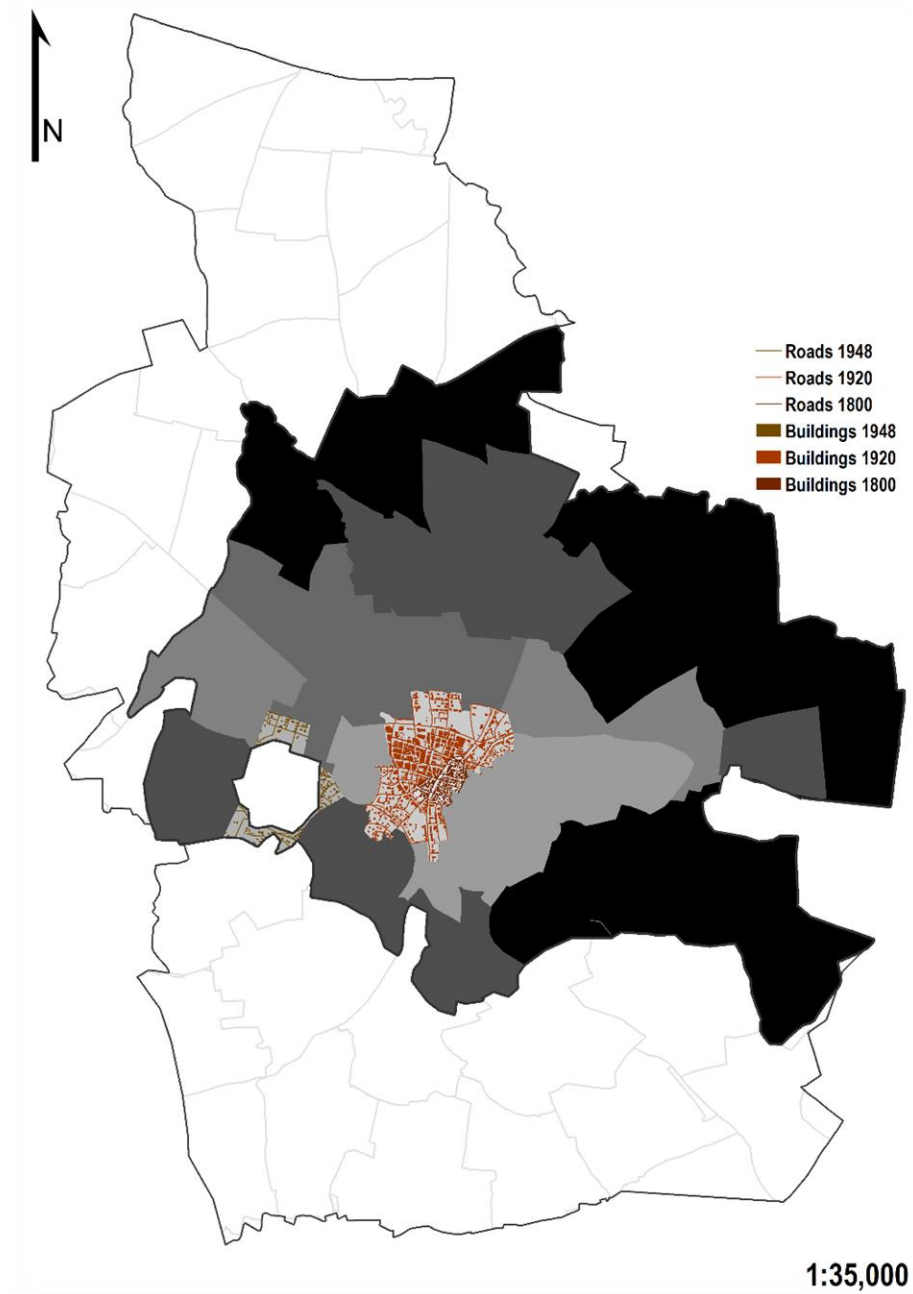
Roads 1920
Roads 1800
Buildings 1920
Buildings 1800
1:35,000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Roads 1800
Buildings 1948
Buildings 1920
Buildings 1800
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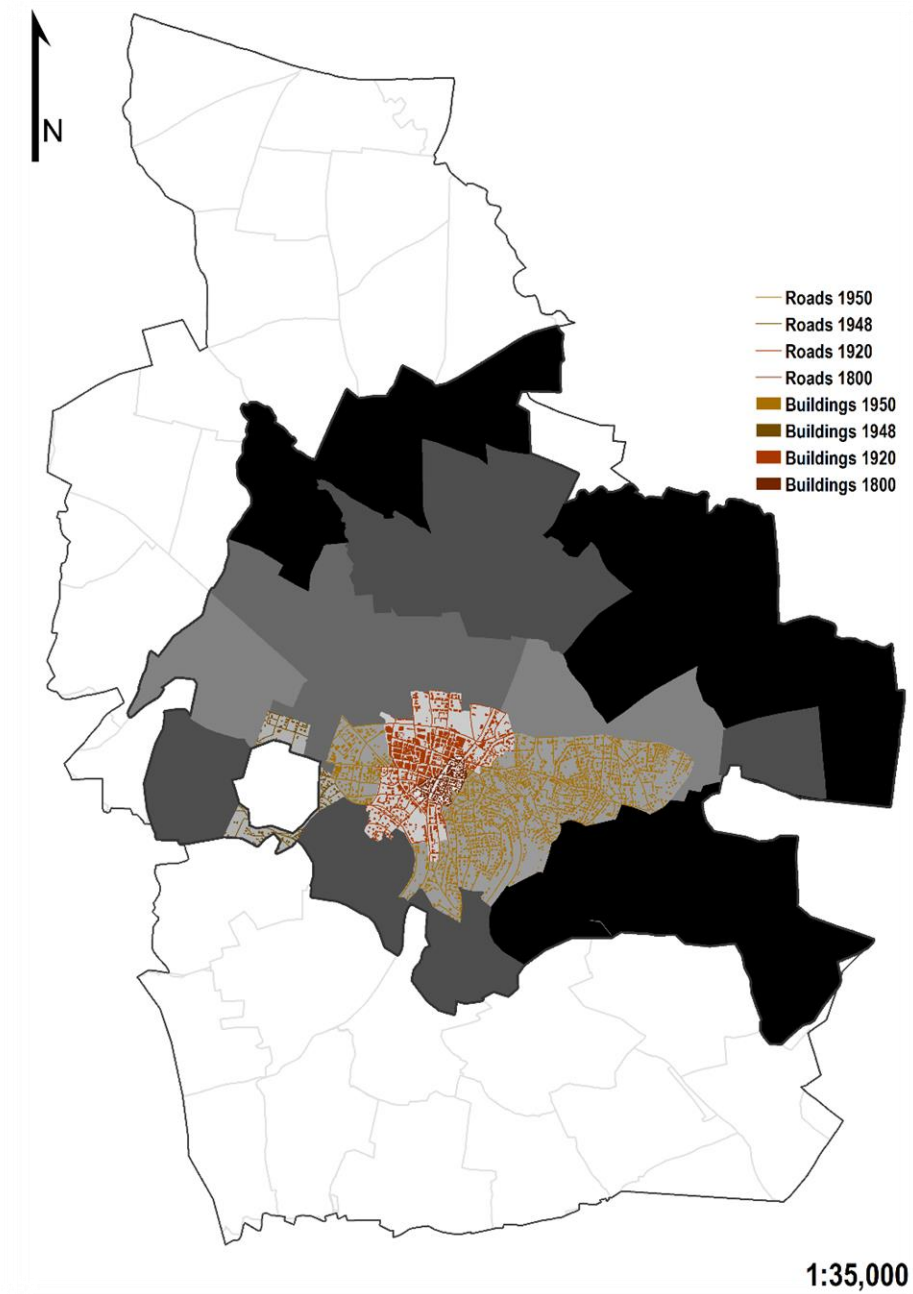
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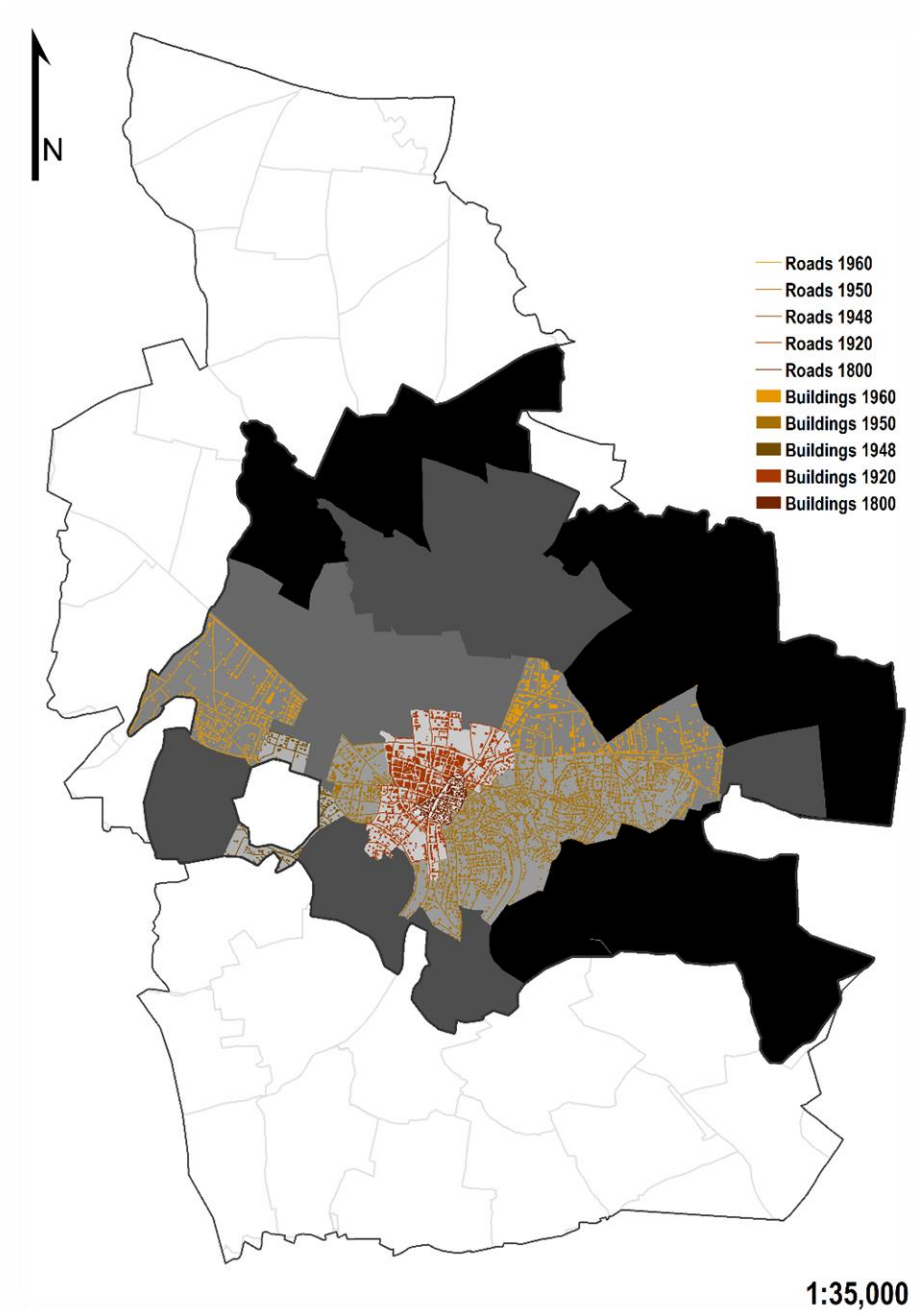
Roads 1948
Roads 1920
Roads 1800
Buildings 1950
Buildings 1948
Buildings 1920
Buildings 1800
1:35,000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Roads 1950
Roads 1948
Roads 1920
Roads 1800
Buildings 1960
Buildings 1950
Buildings 1948
Buildings 1920
Buildings 1800
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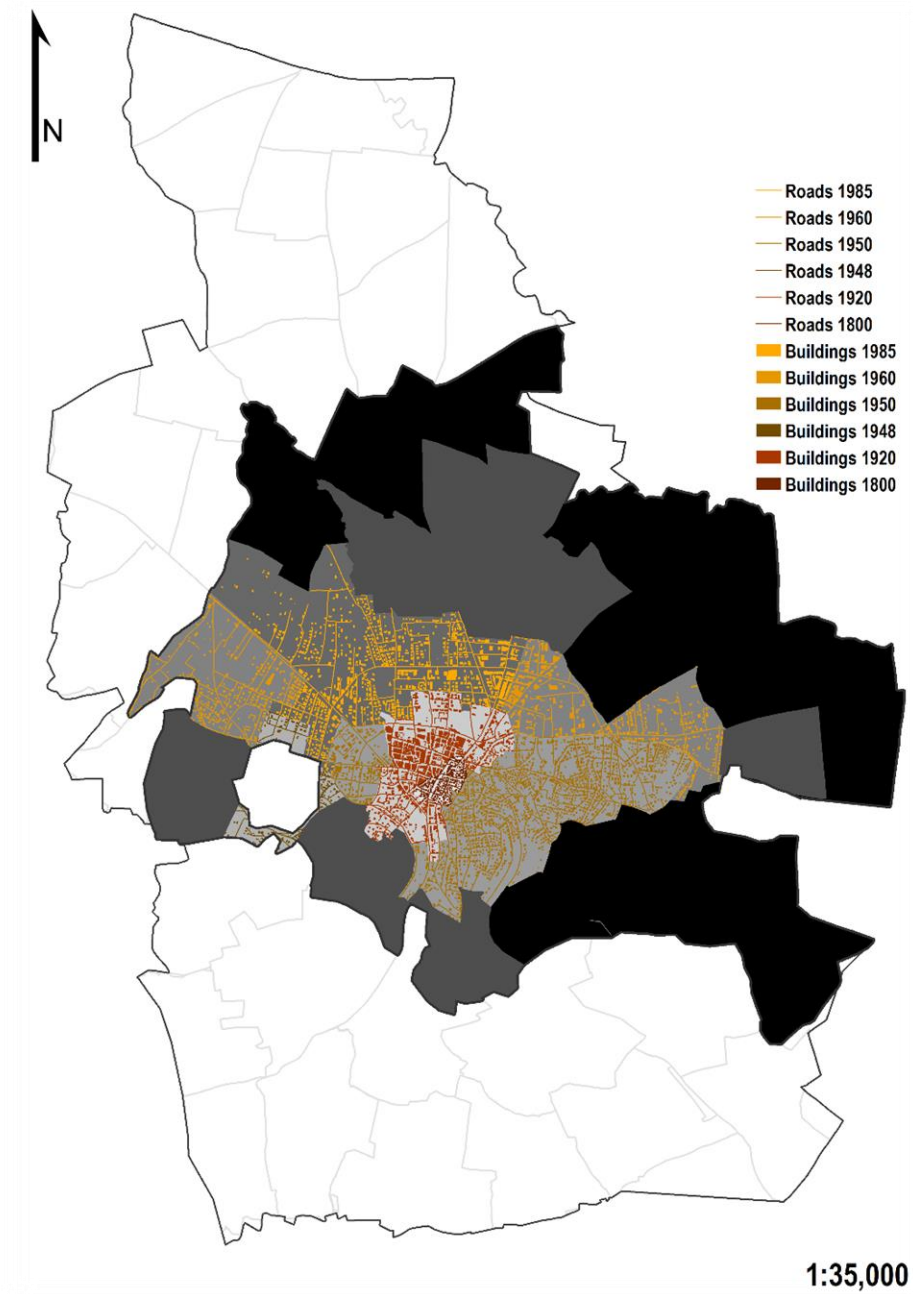
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Roads 1985
Roads 1960
Roads 1950
Roads 1948
Roads 1920
Roads 1800
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Buildings 1950
Buildings 1948
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Buildings 1800
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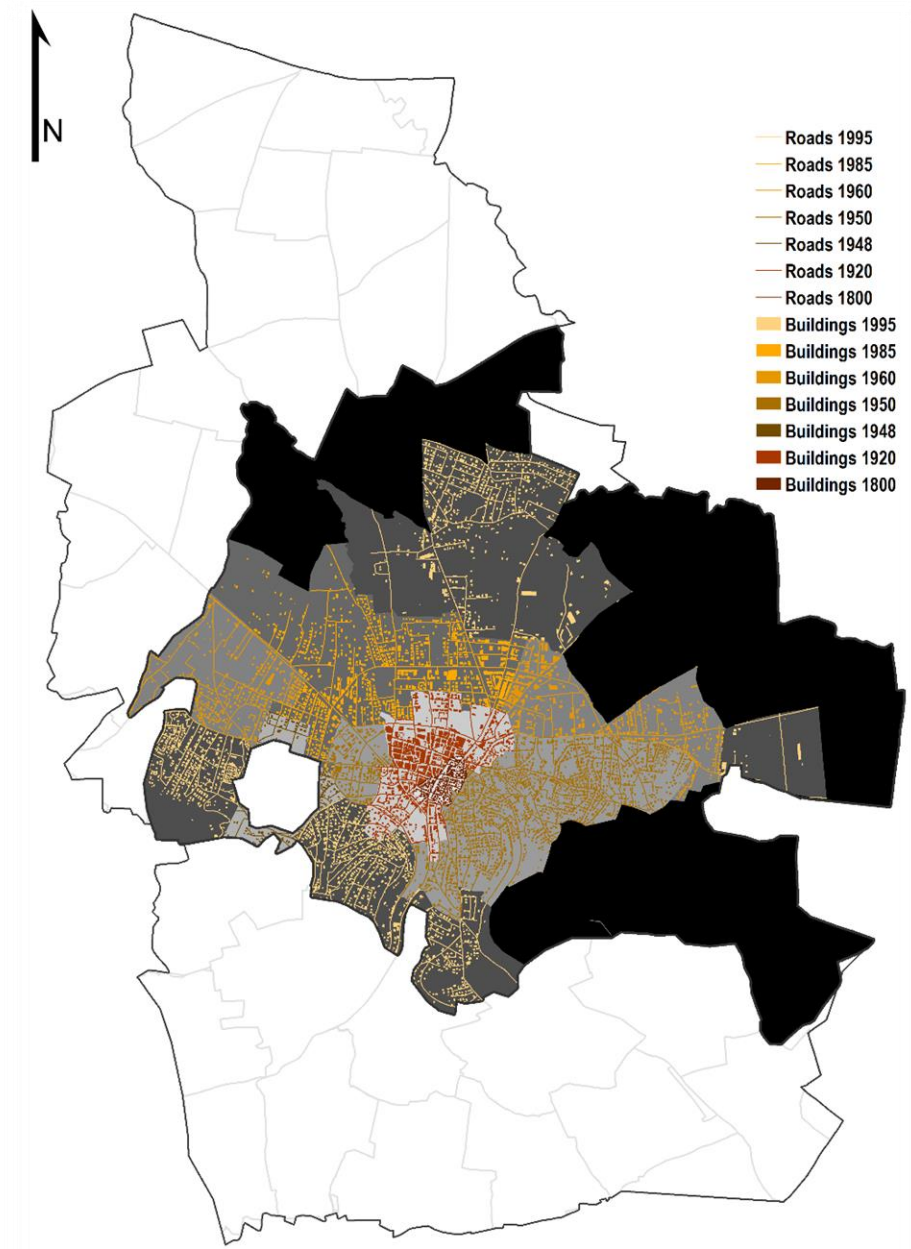
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Buildings 1950
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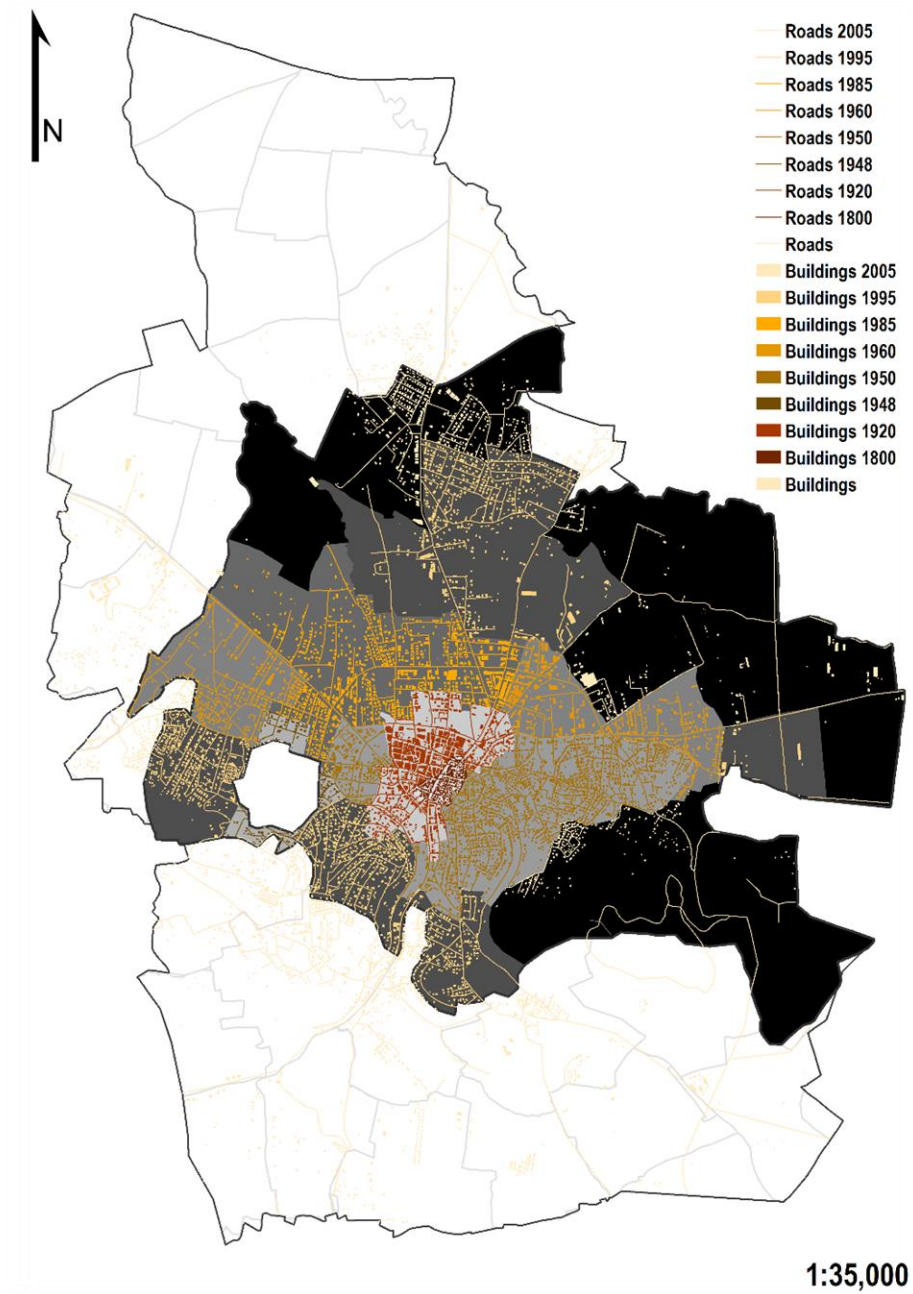
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Buildings 1948
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Buildings 1800
Buildings
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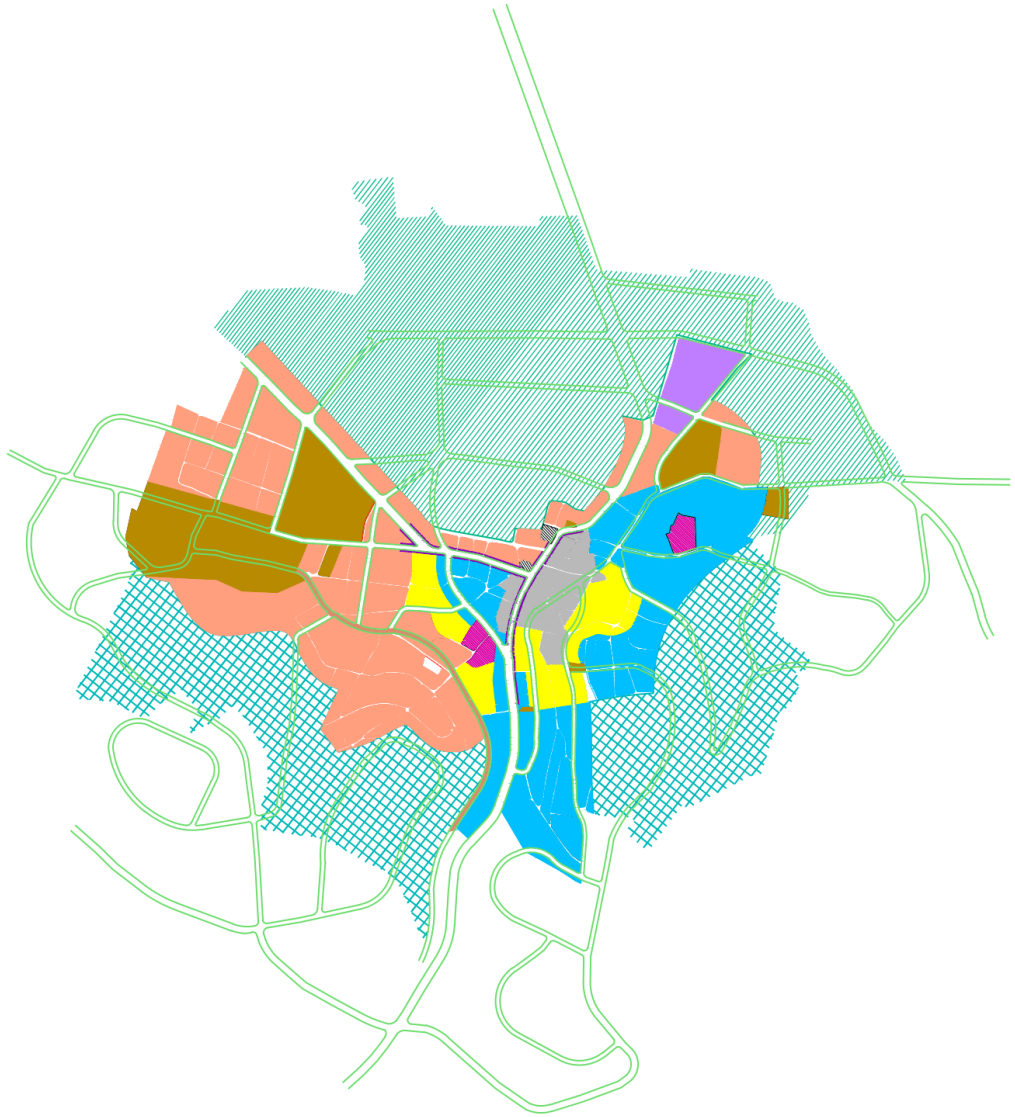
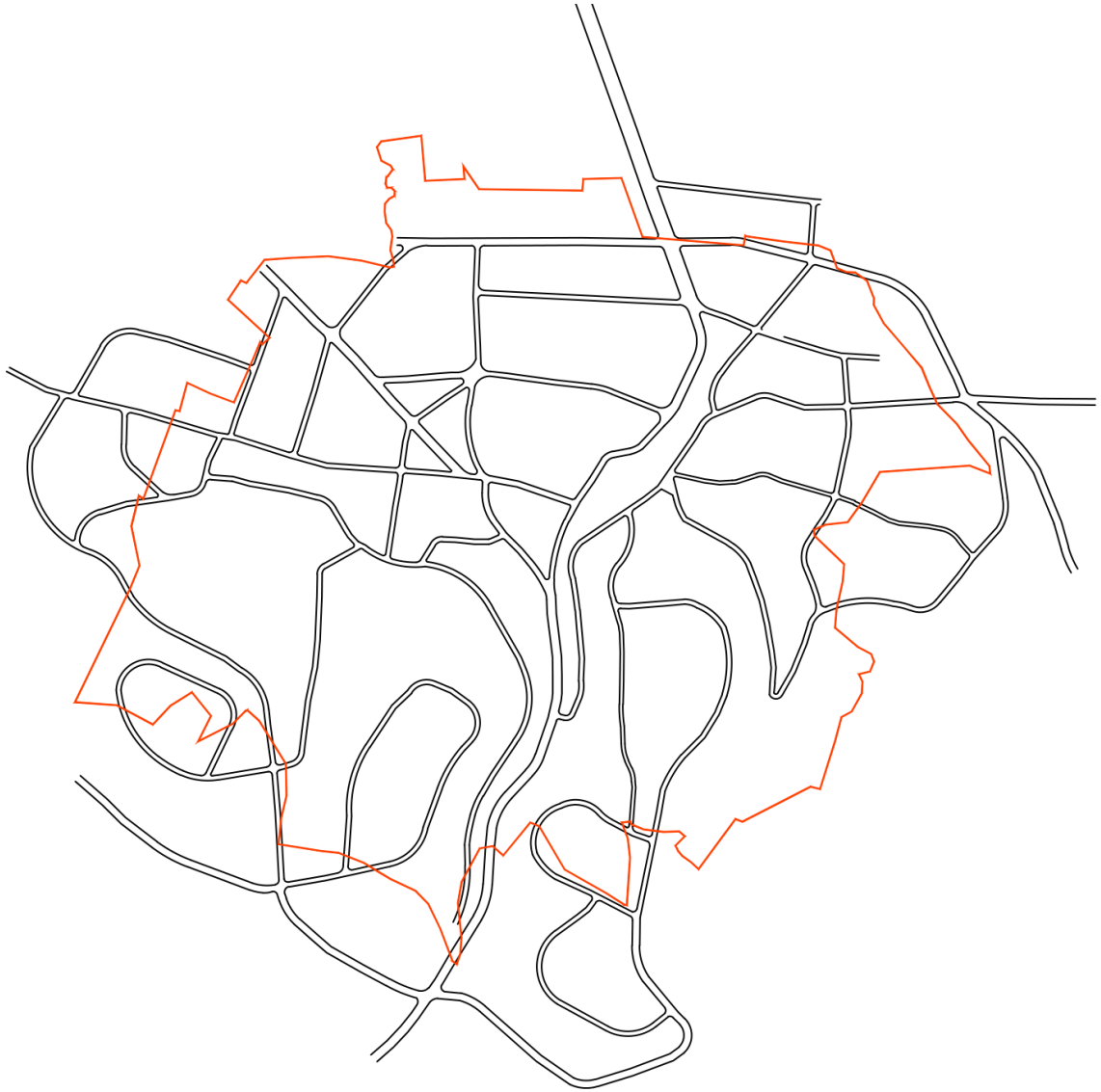
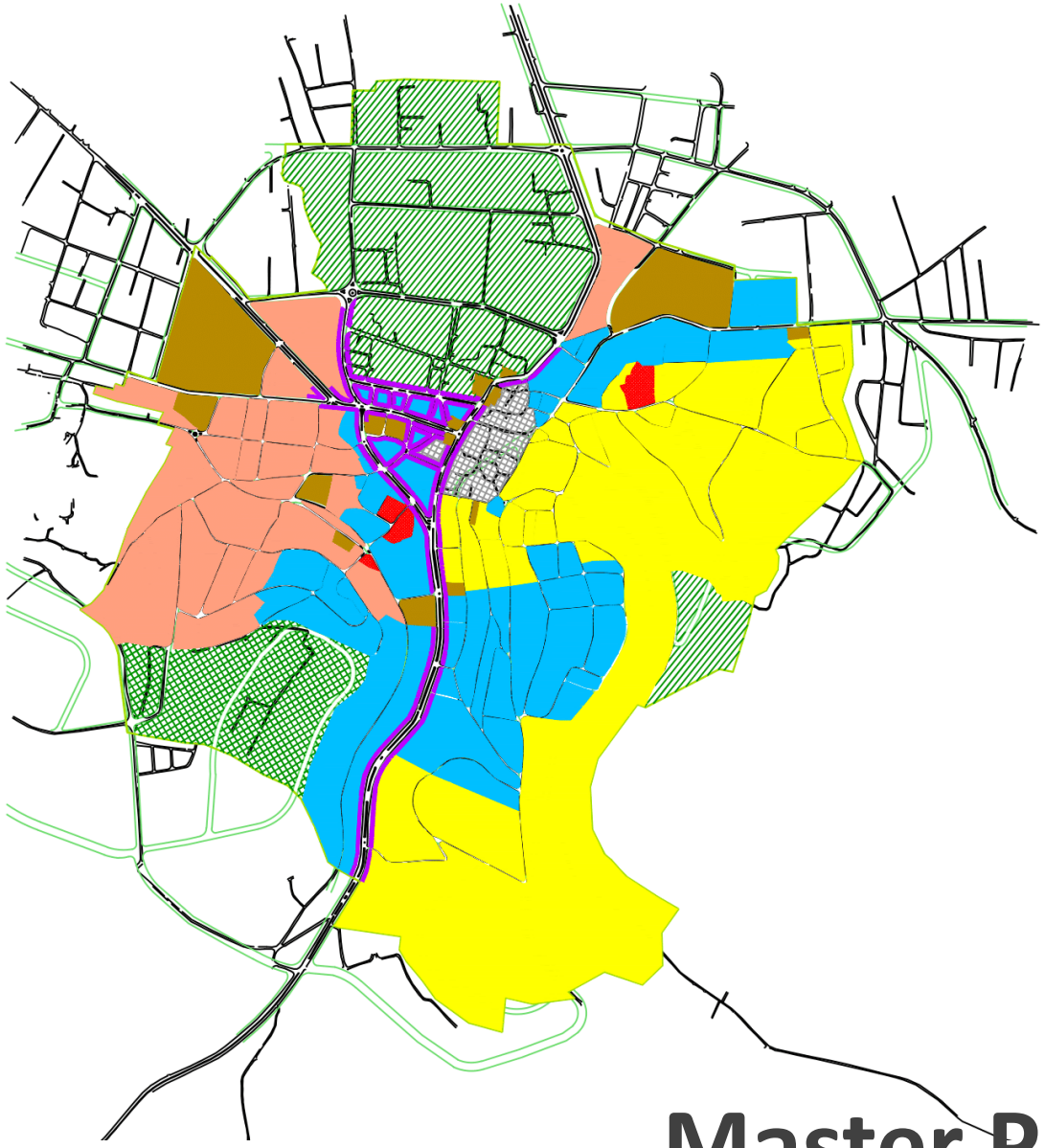
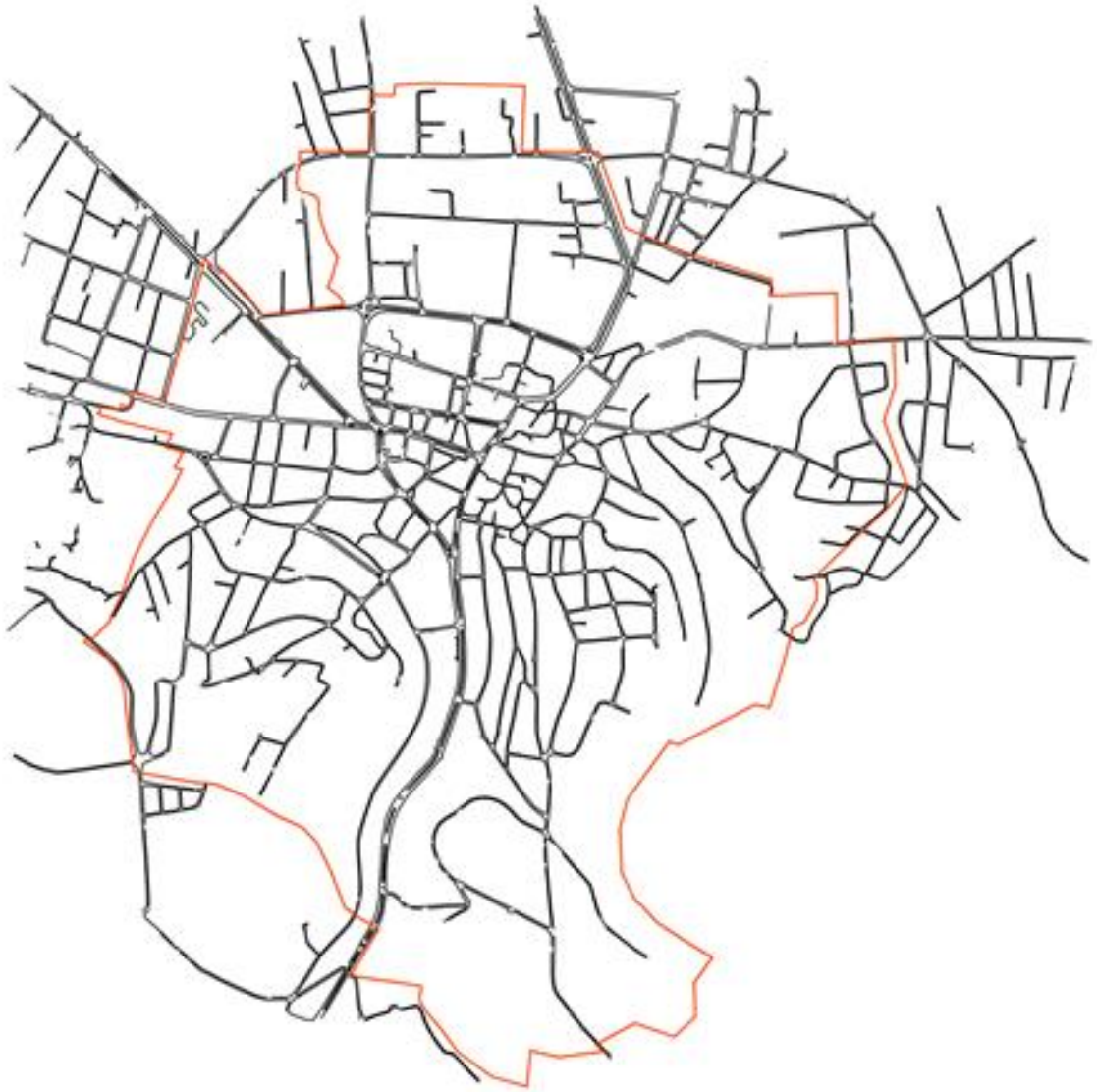


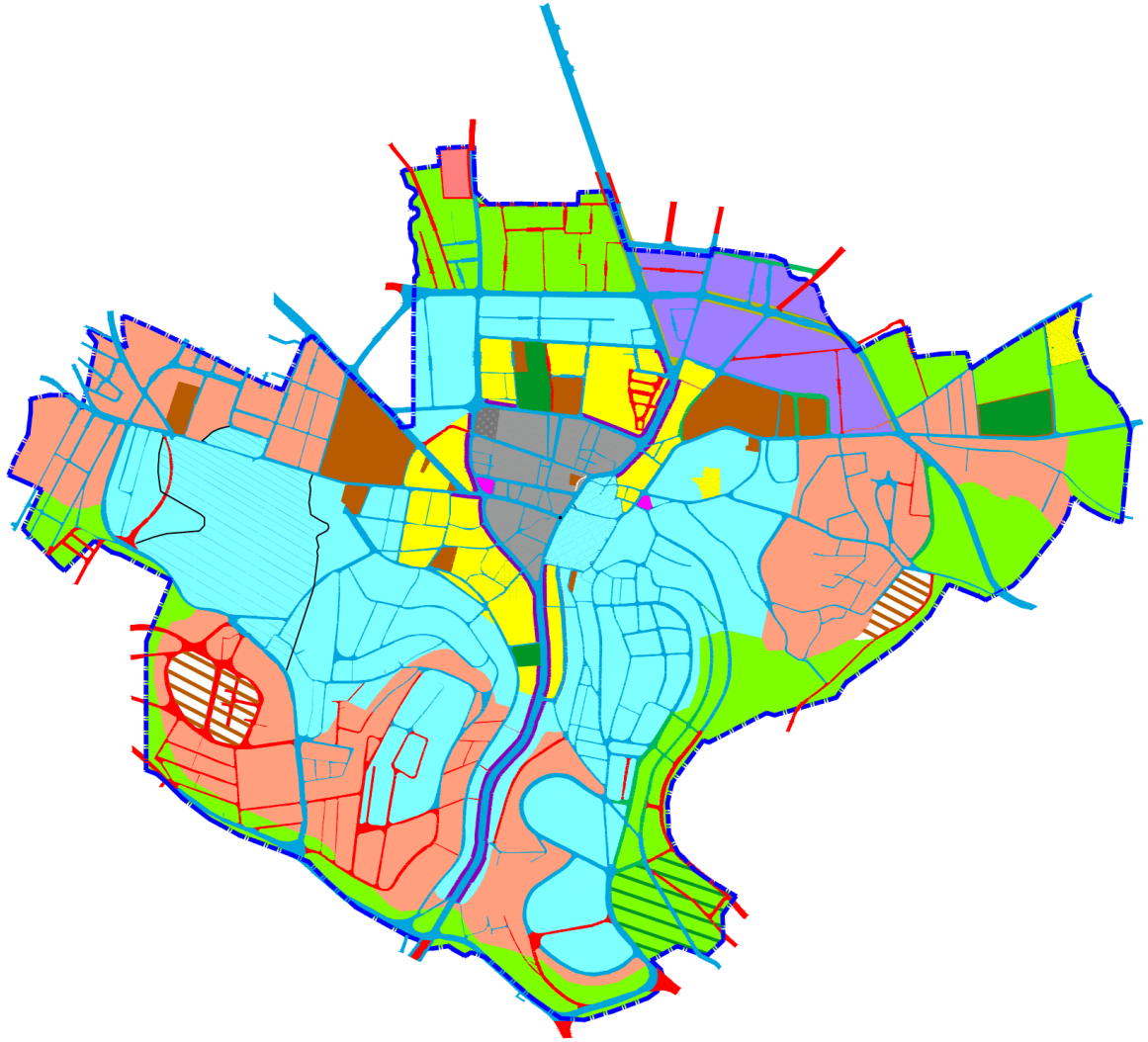


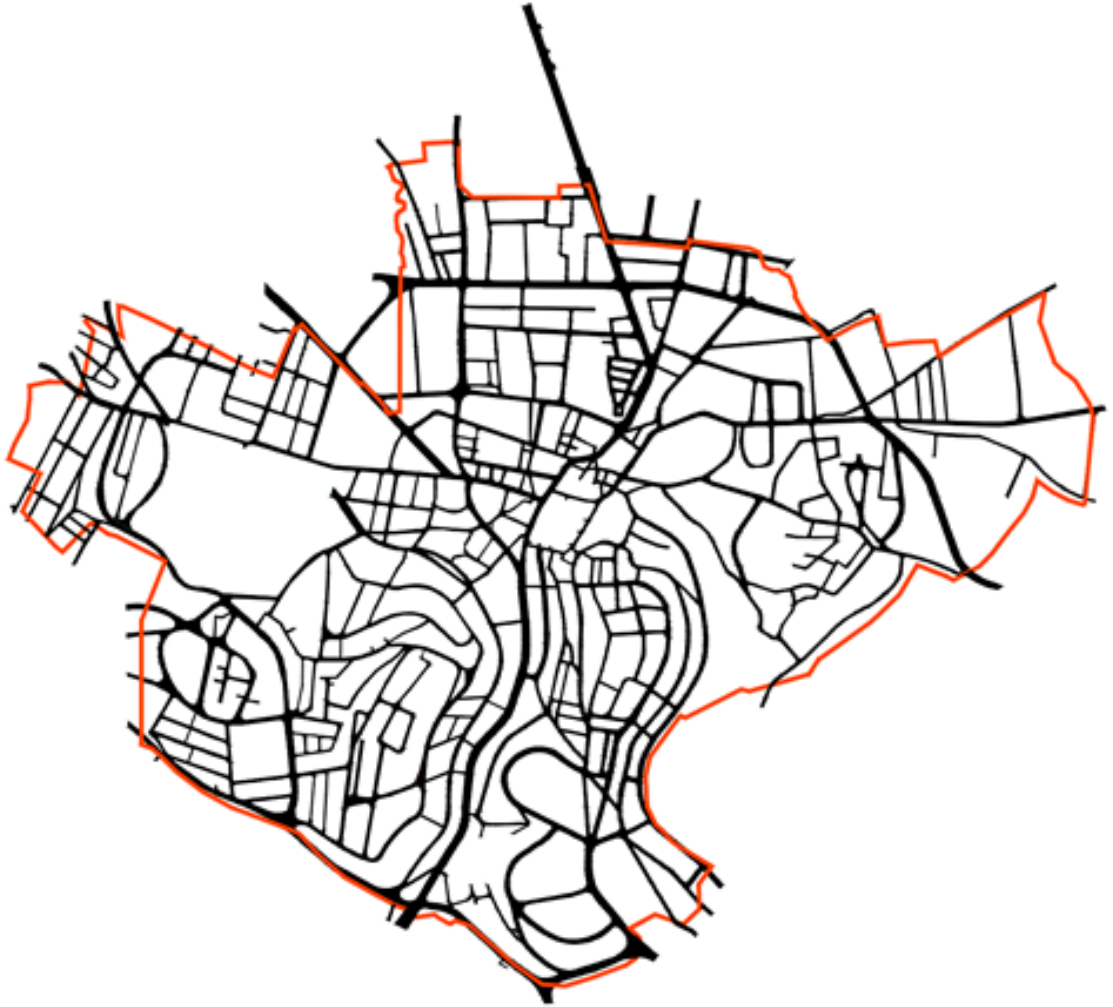
Master Plan 1947



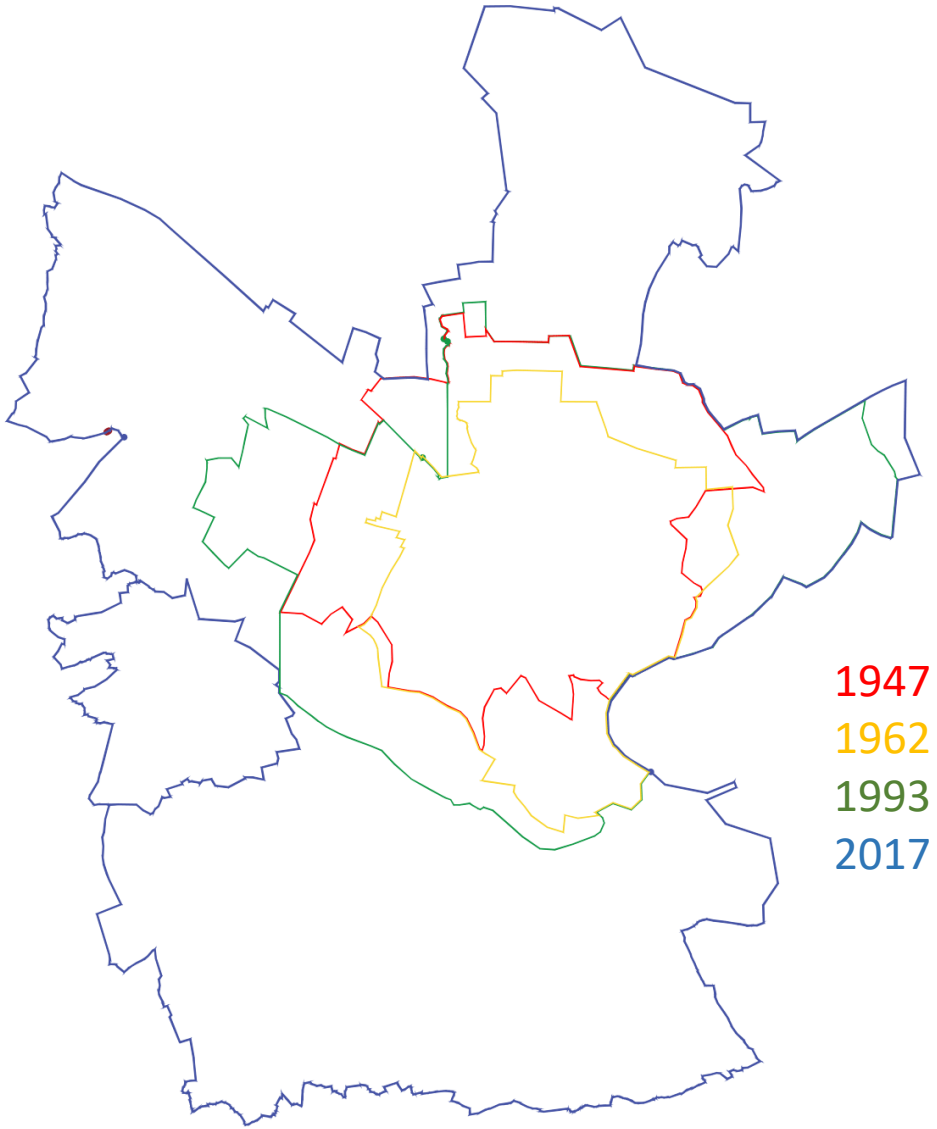


Master Plan 1962

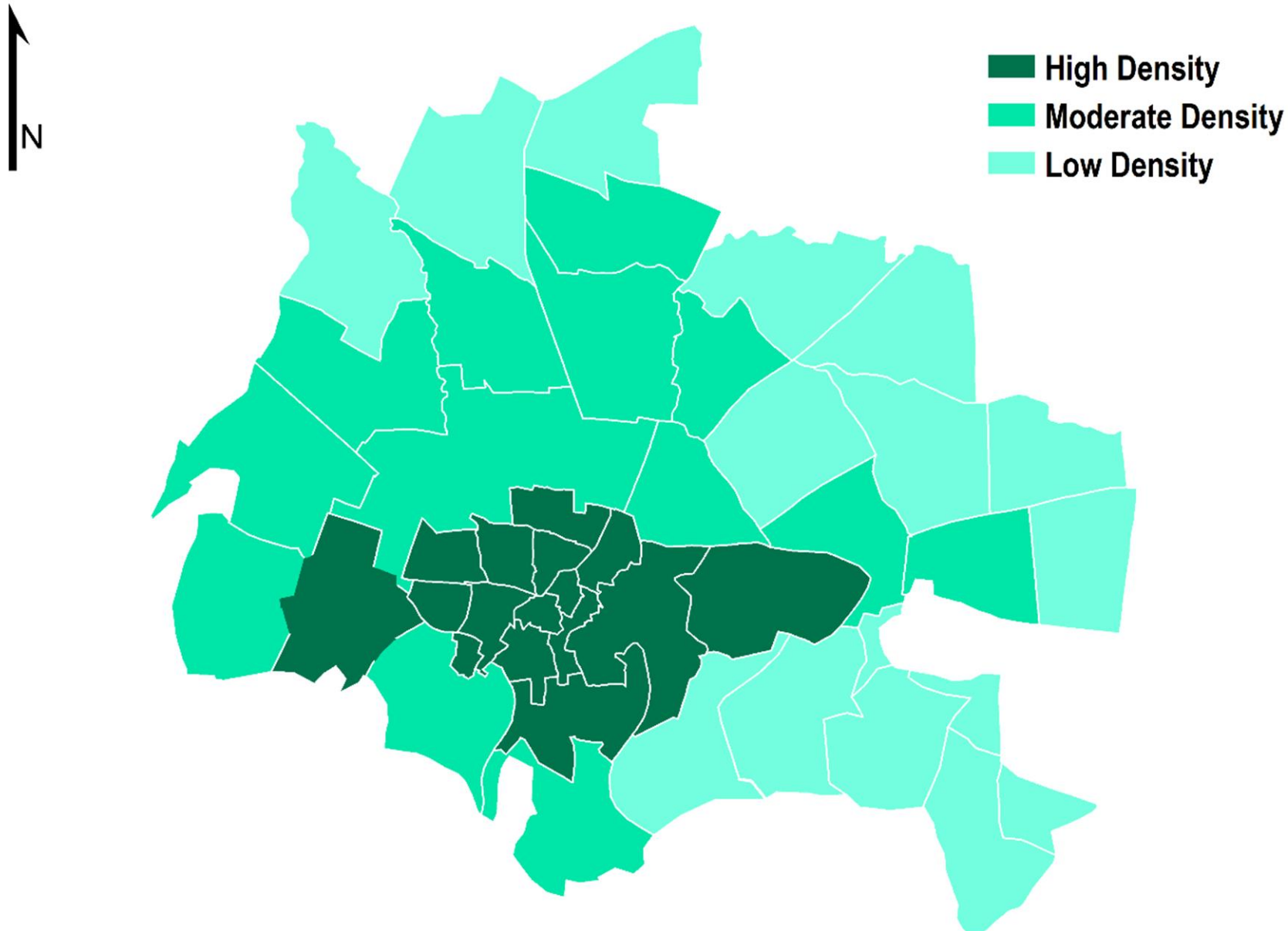




Master Plan 1993

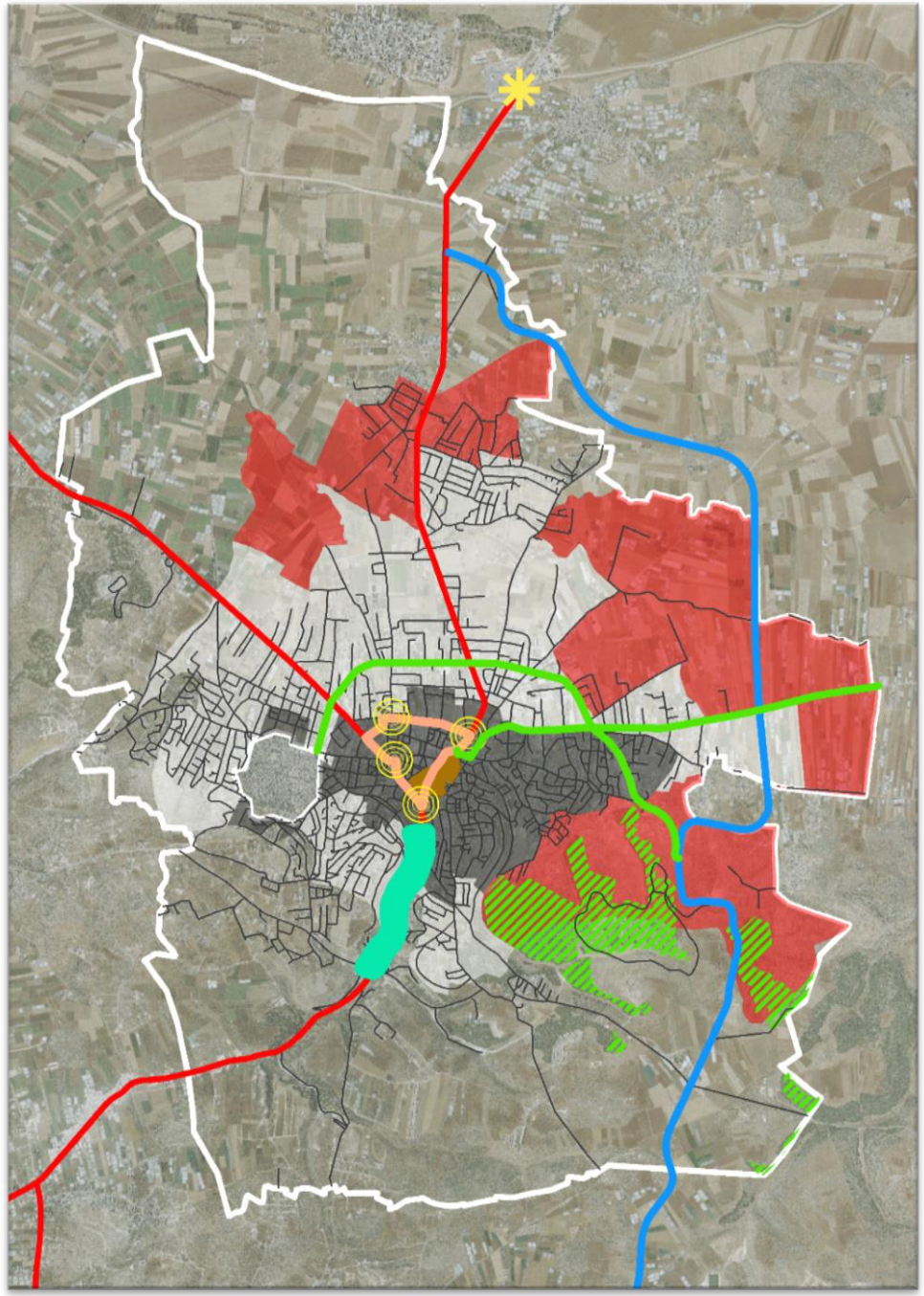


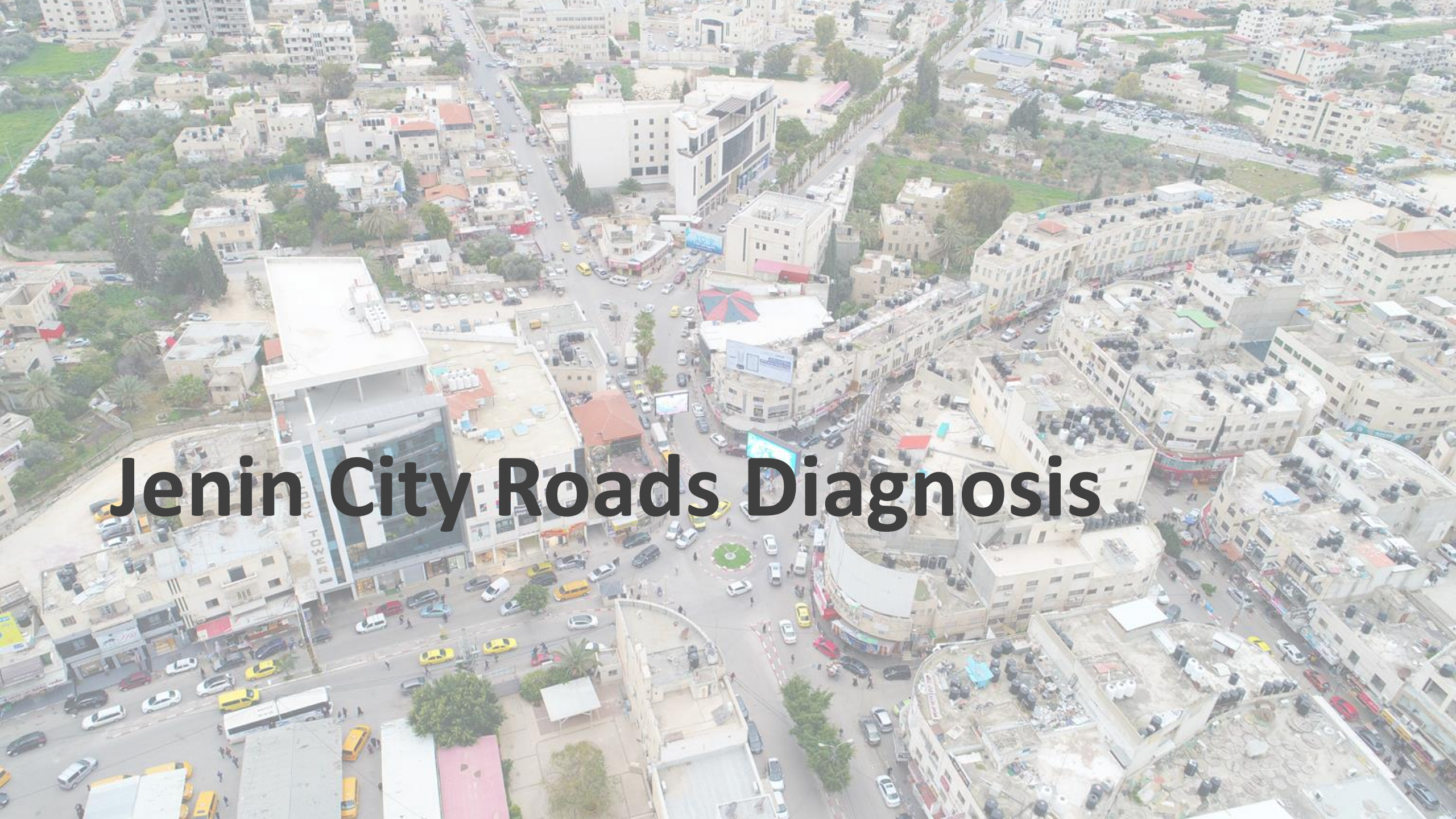
Master Plan 2017


N
High Density
Moderate Density
Low Density

Problems in Jenin City

- Jenin City
- CBD
- Old Town
- High Density Residential Area
- Moderate Density Residential Area
- Area Need Serves
- Roads need Reviving
- High Traffic
- Congested Intersection
- Check Points
- Ring Road
- Bad Uses
- Roads
- Forest



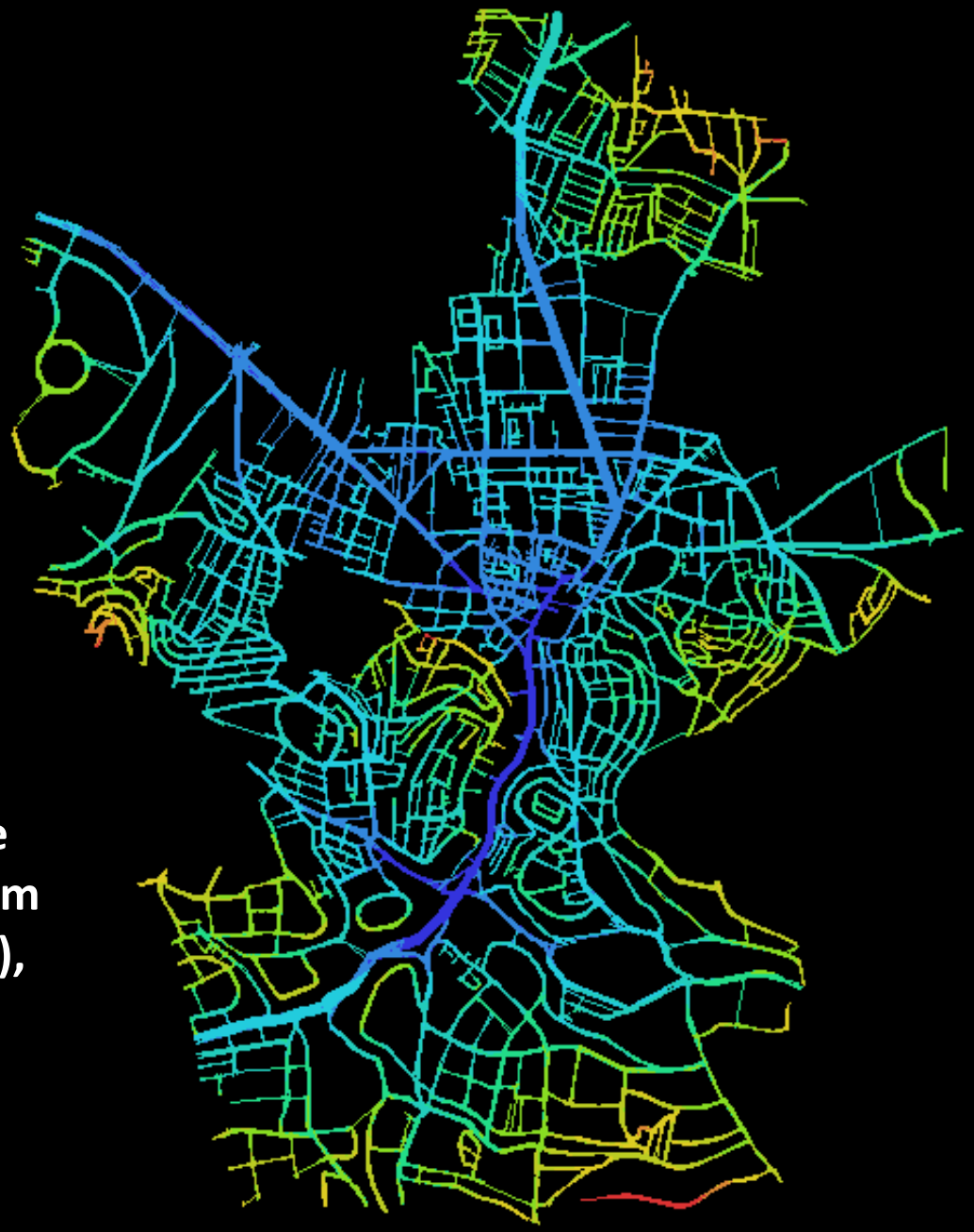


Jenin City Roads Diagnosis

Space Syntax Analysis “ Depth Map “

Axial map “ Municipality Behavior ”

Mean Depth



Mean Depth:

means number of intervening lines that must be crossed to get from space to another, the minimum number of steps means shallowness (integration), whereas the maximum number of ones means segregation.

Integration

Integration:

is a static global measure. It describes the average depth of a space to all other spaces in the system. It describes how easy it is to get to one segment from all other segments

Connectivity

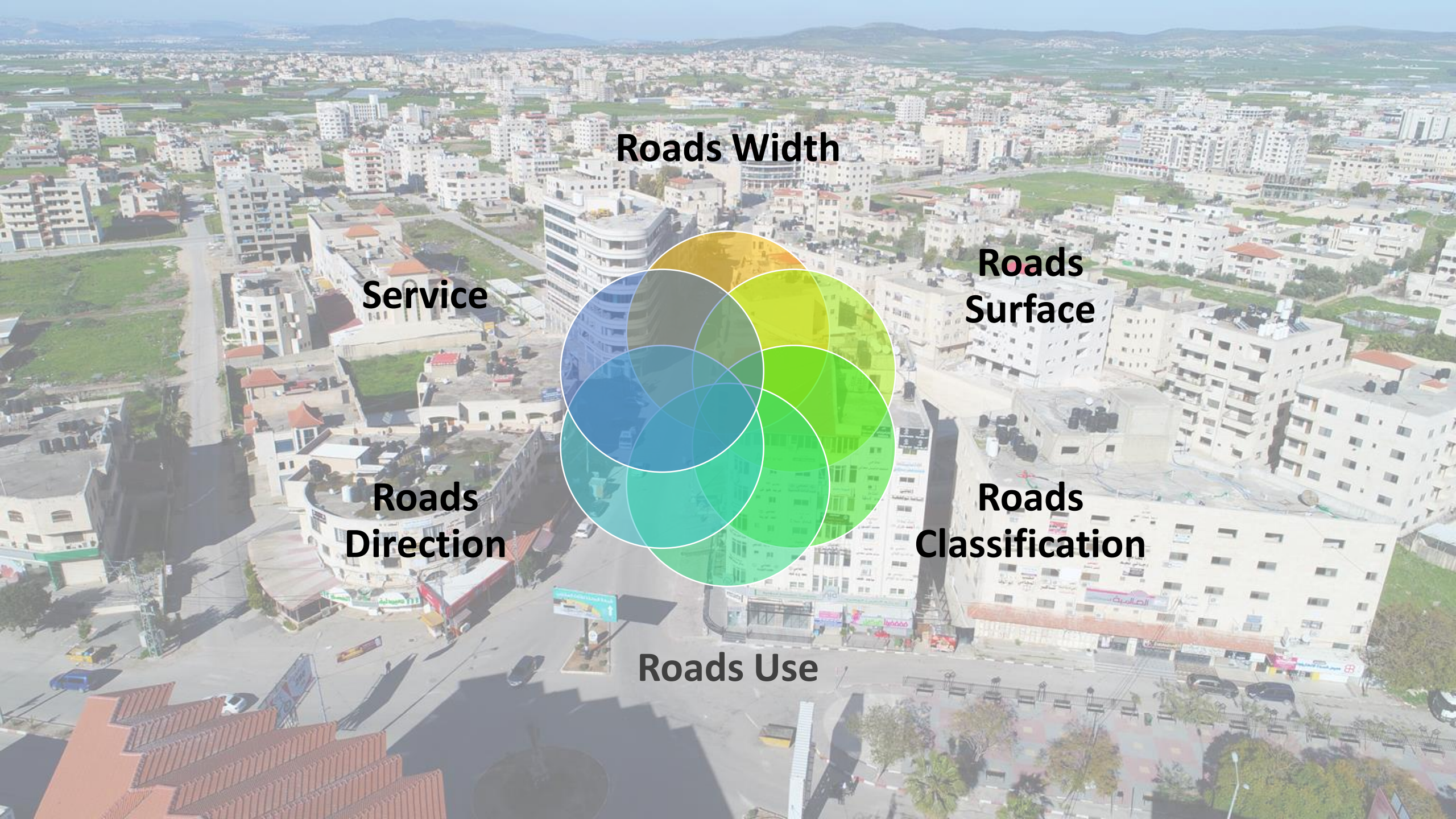
Connectivity:

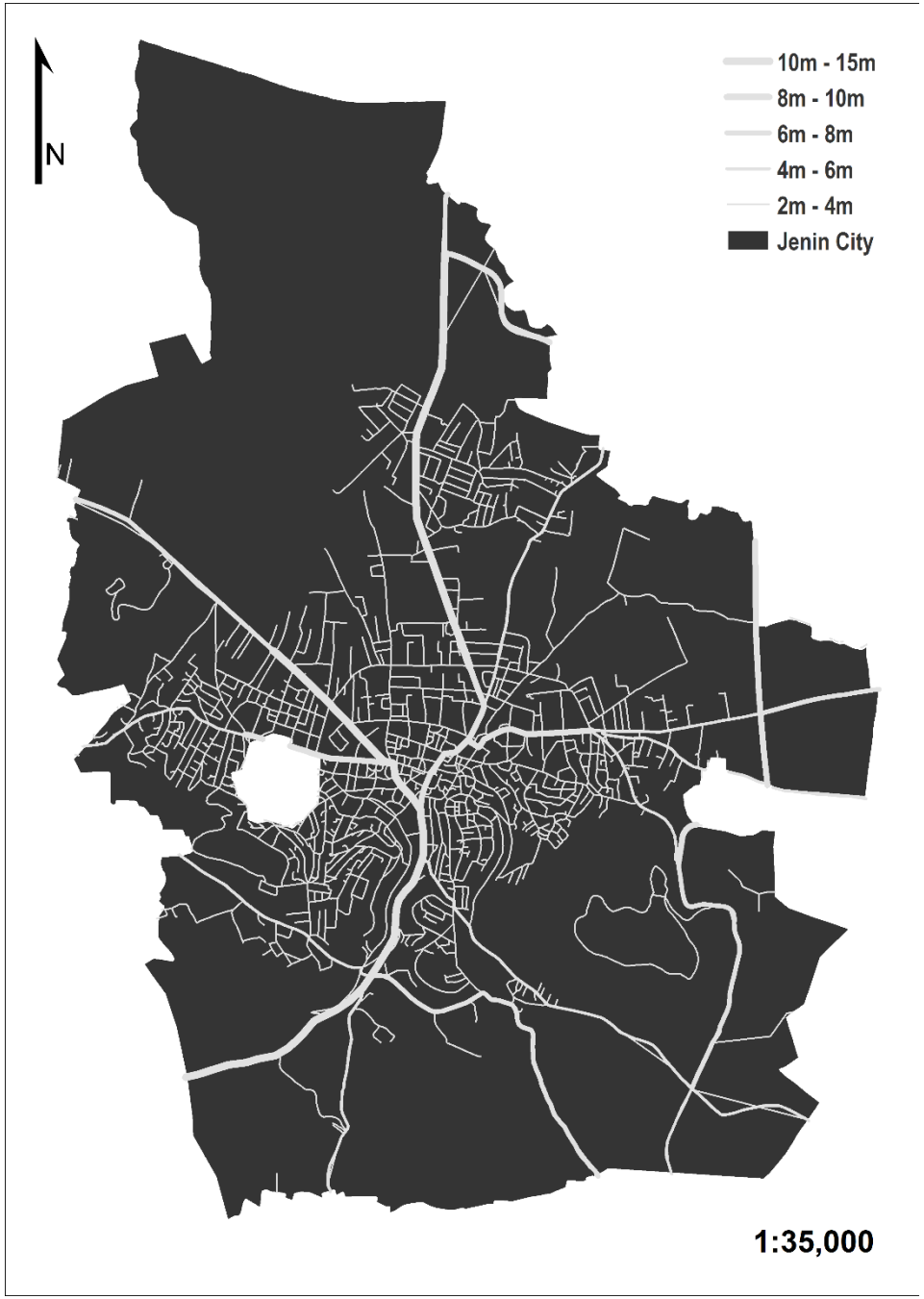
measures the number of immediate neighbors that are directly connected to a space.
This is a static local measure

Choice

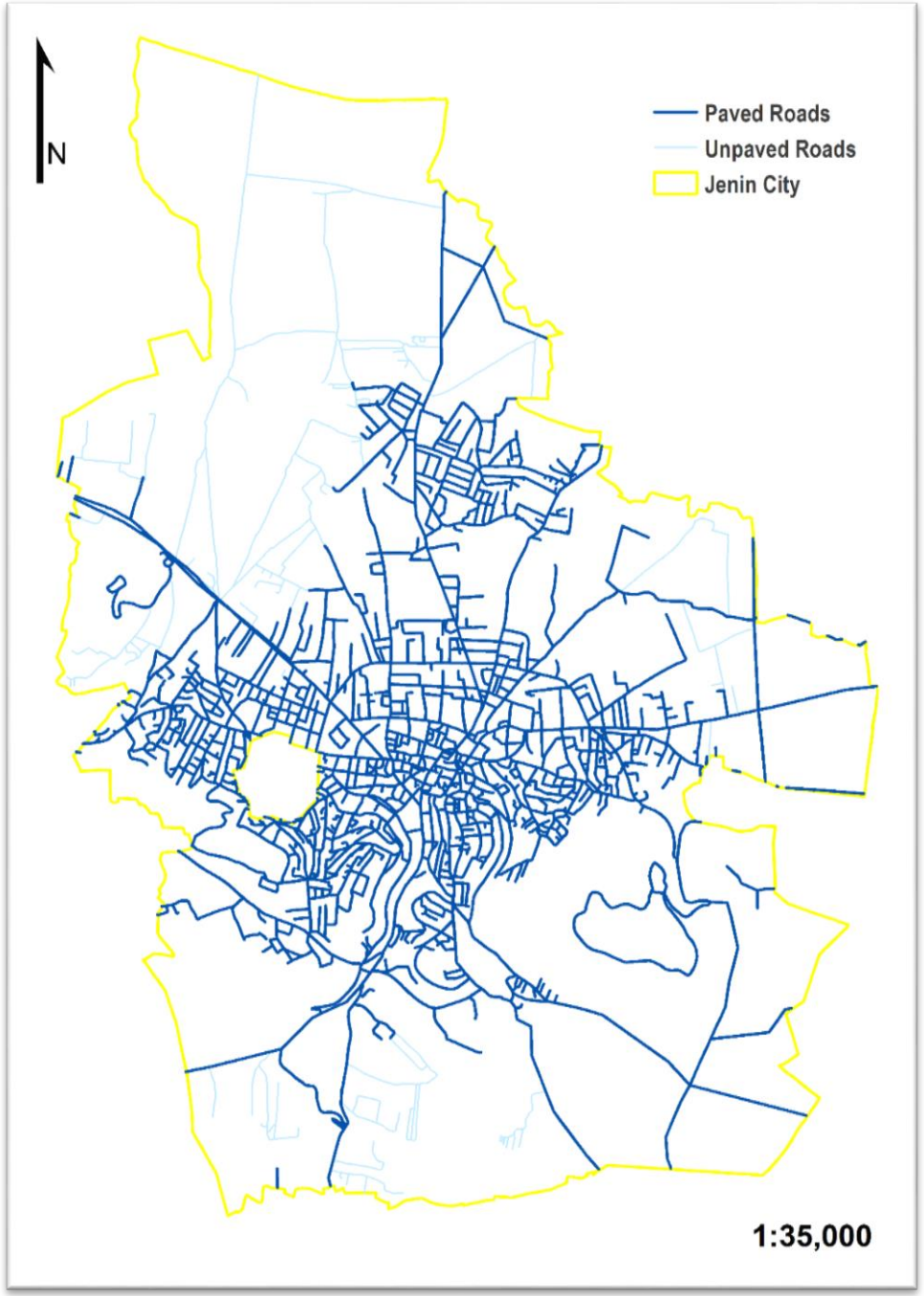
Choice:

is a dynamic global measure of the “flow” through a space. A space has a strong choice value when many of the shortest paths, connecting all spaces to all spaces of a system, passes through it.

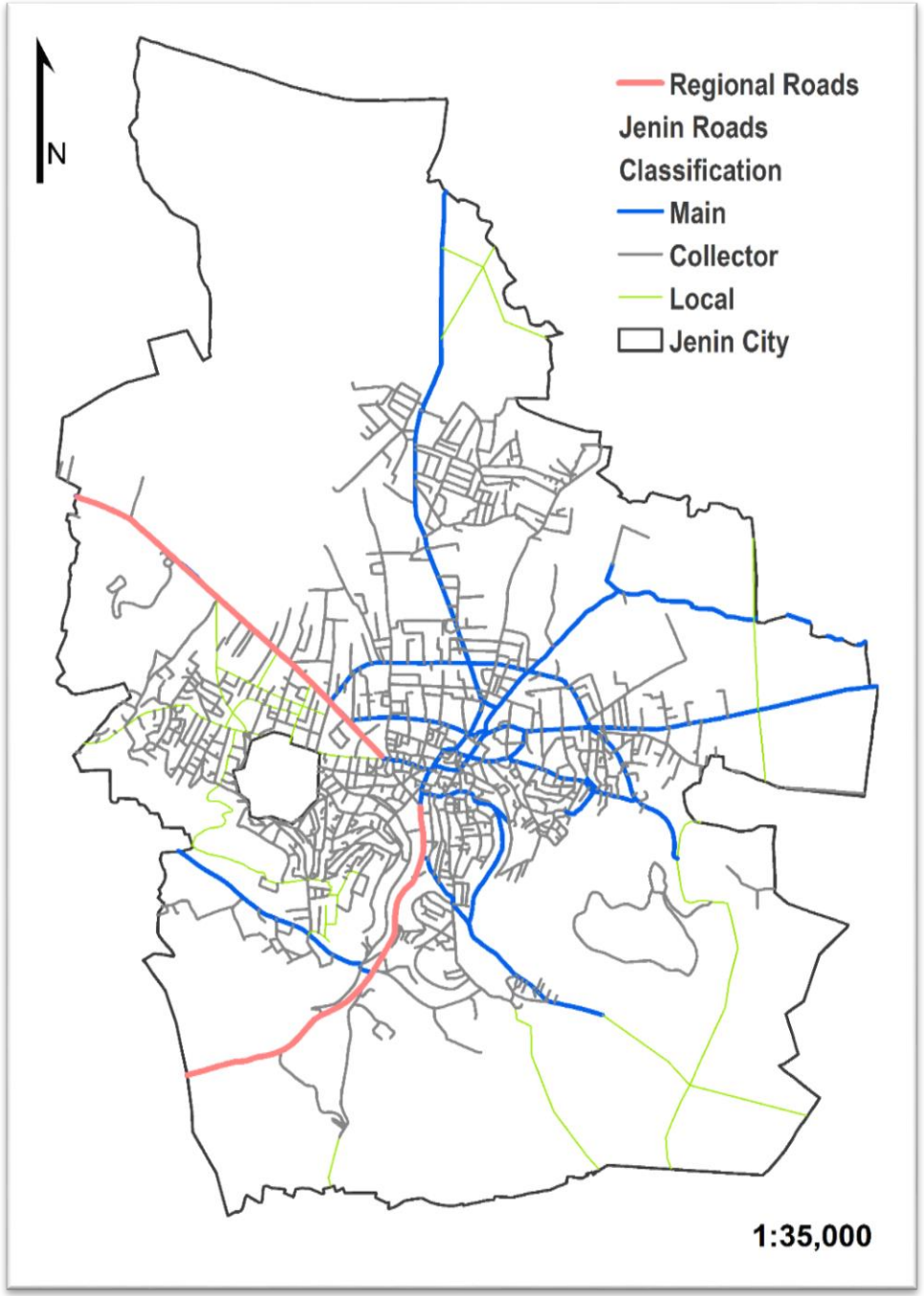

Roads Width
Service
Roads Surface
Roads Direction
Roads Classification
Roads Use



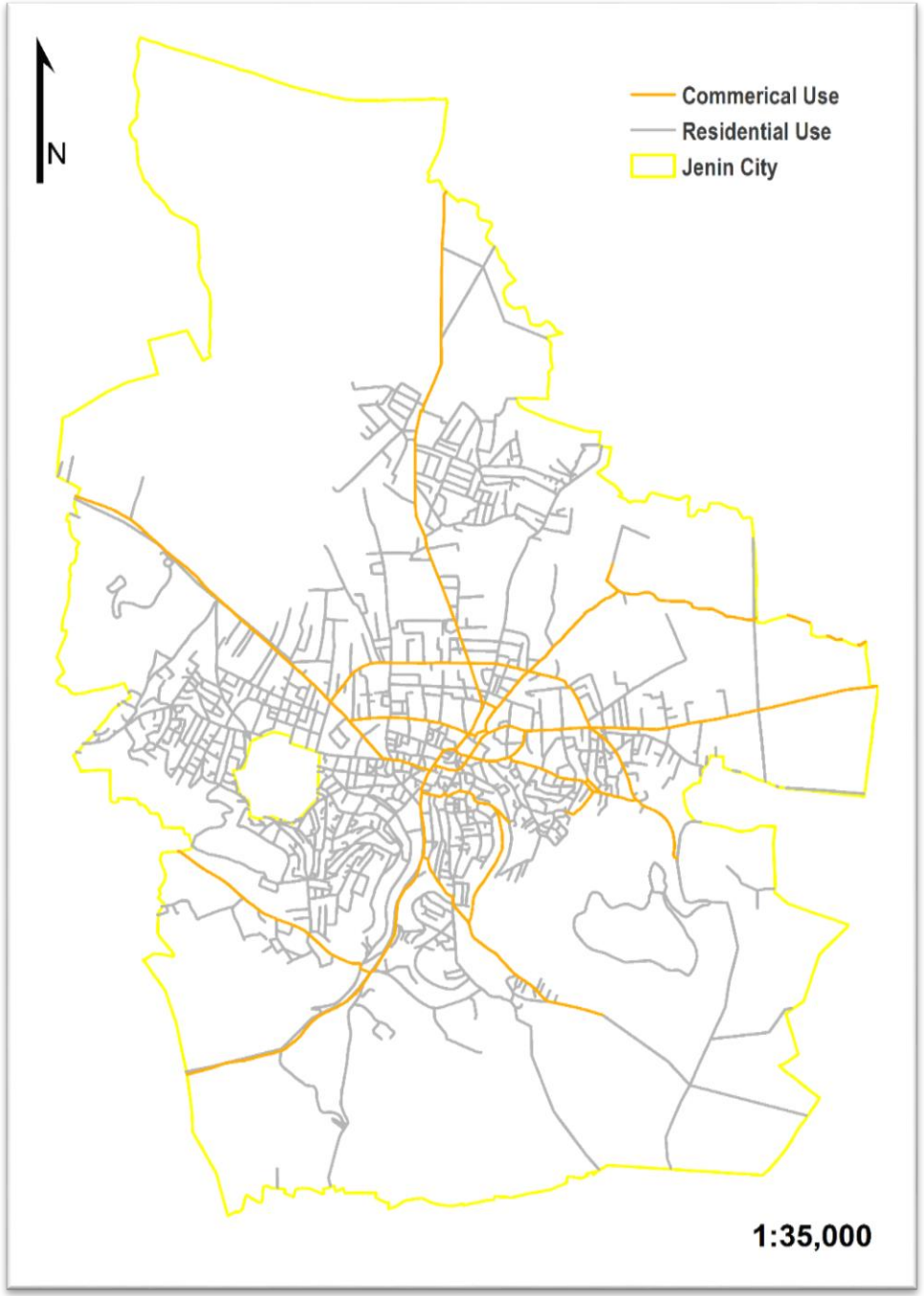
Roads Width



Roads Surface

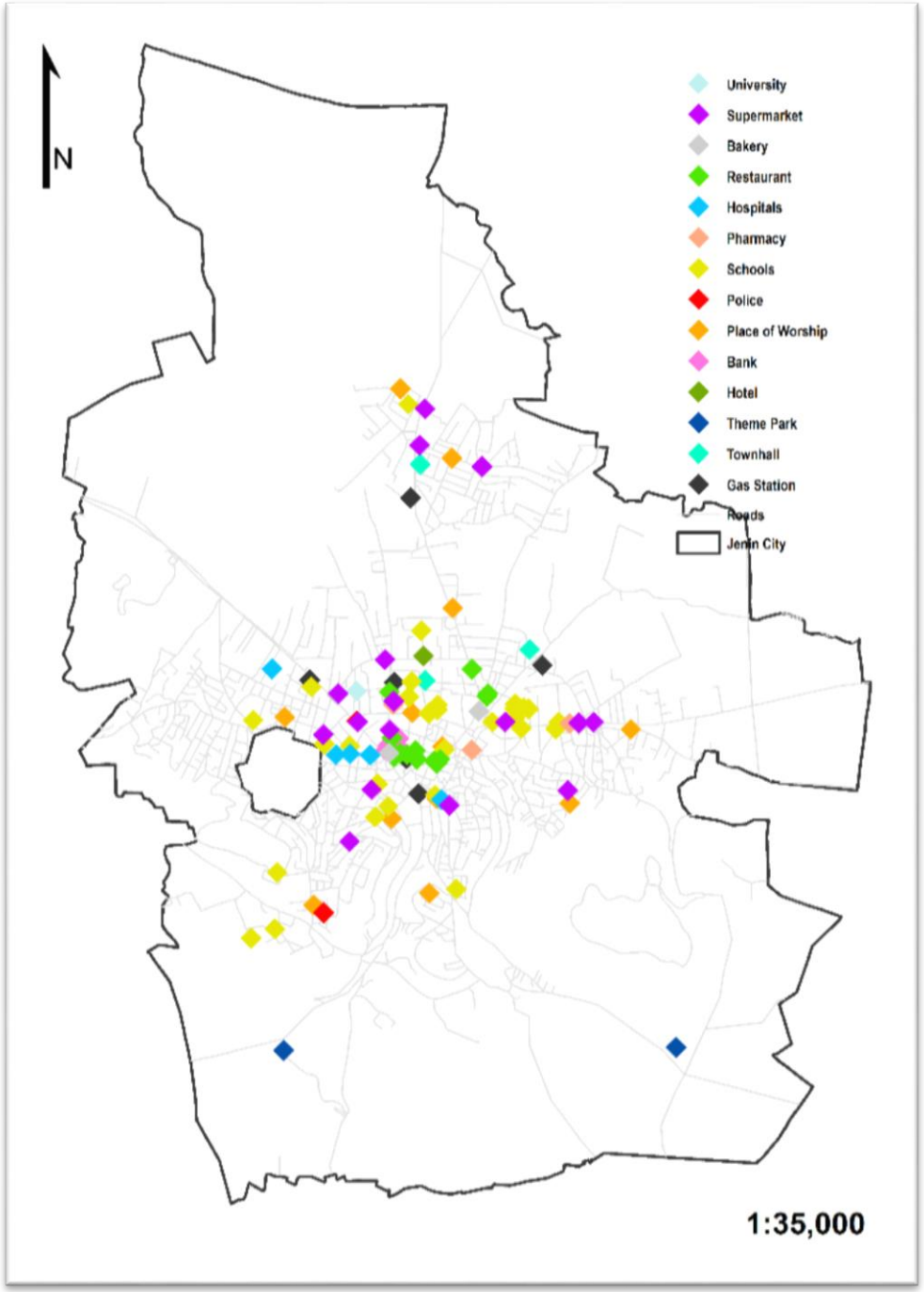


Roads Classification



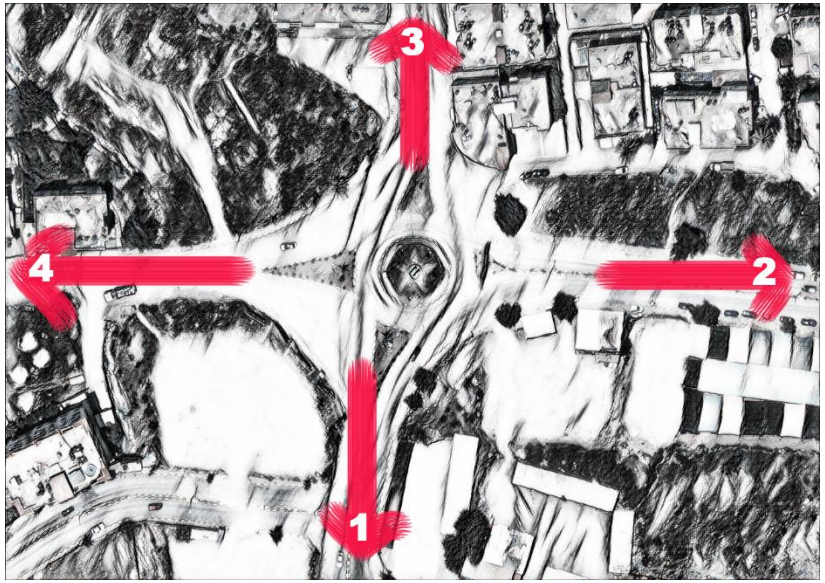
Roads Use

Roads Direction

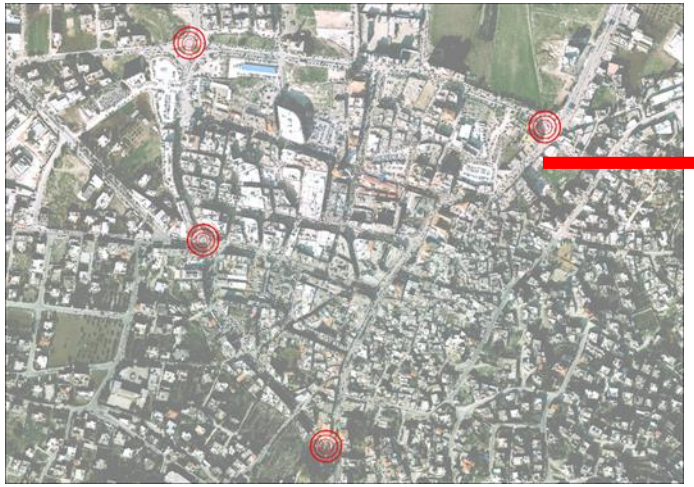

N
University
Supermarket
Bakery
Restaurant
Hospitals
Pharmacy
Schools
Police
Place of Worship
Bank
Hotel
Theme Park
Townhall
Gas Station
Roads
Jenin City
1:35,000

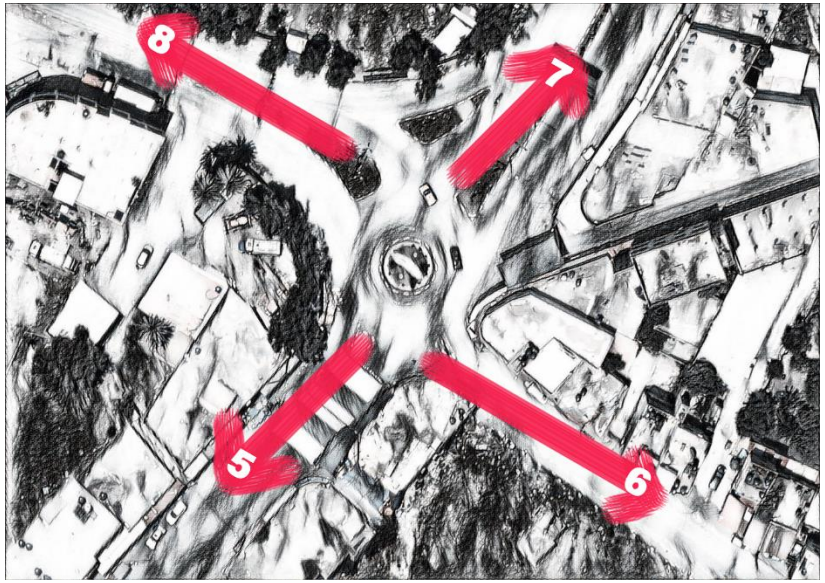
Service

Traffic Volume Counts

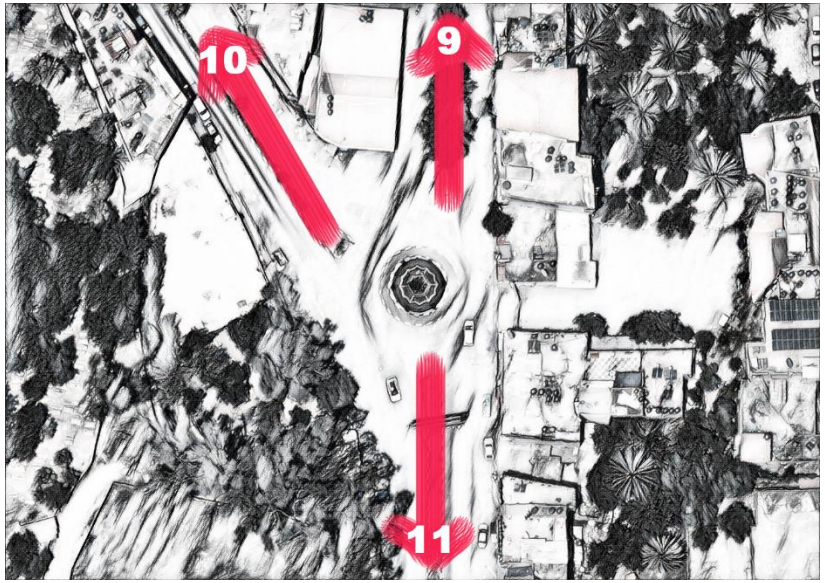


Yahya Ayyash	PH	PHV	Pedestrian
North Approach	12:00 PM – 1:00 PM	842	112
South Approach	12:00 PM – 1:00 PM	833	219
East Approach	12:00 PM – 1:00 PM	1576	119
West Approach	12:00 PM – 1:00 PM	487	150

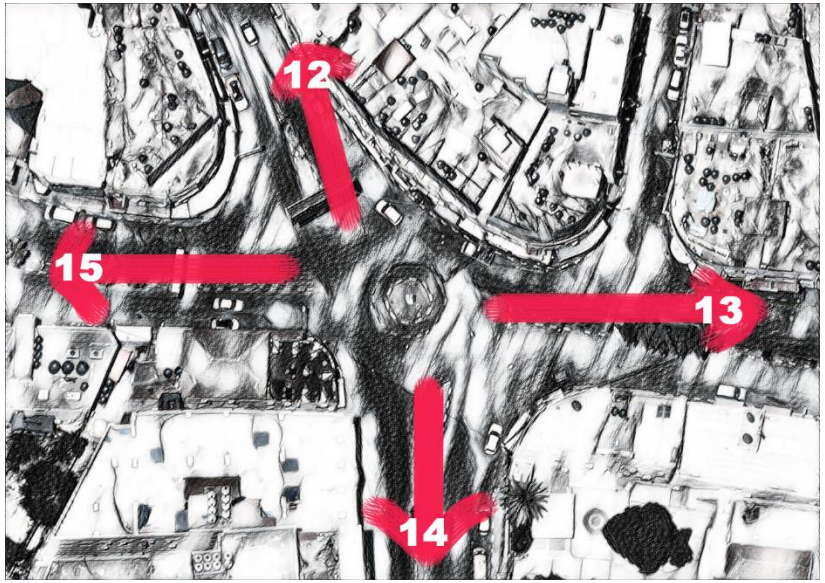




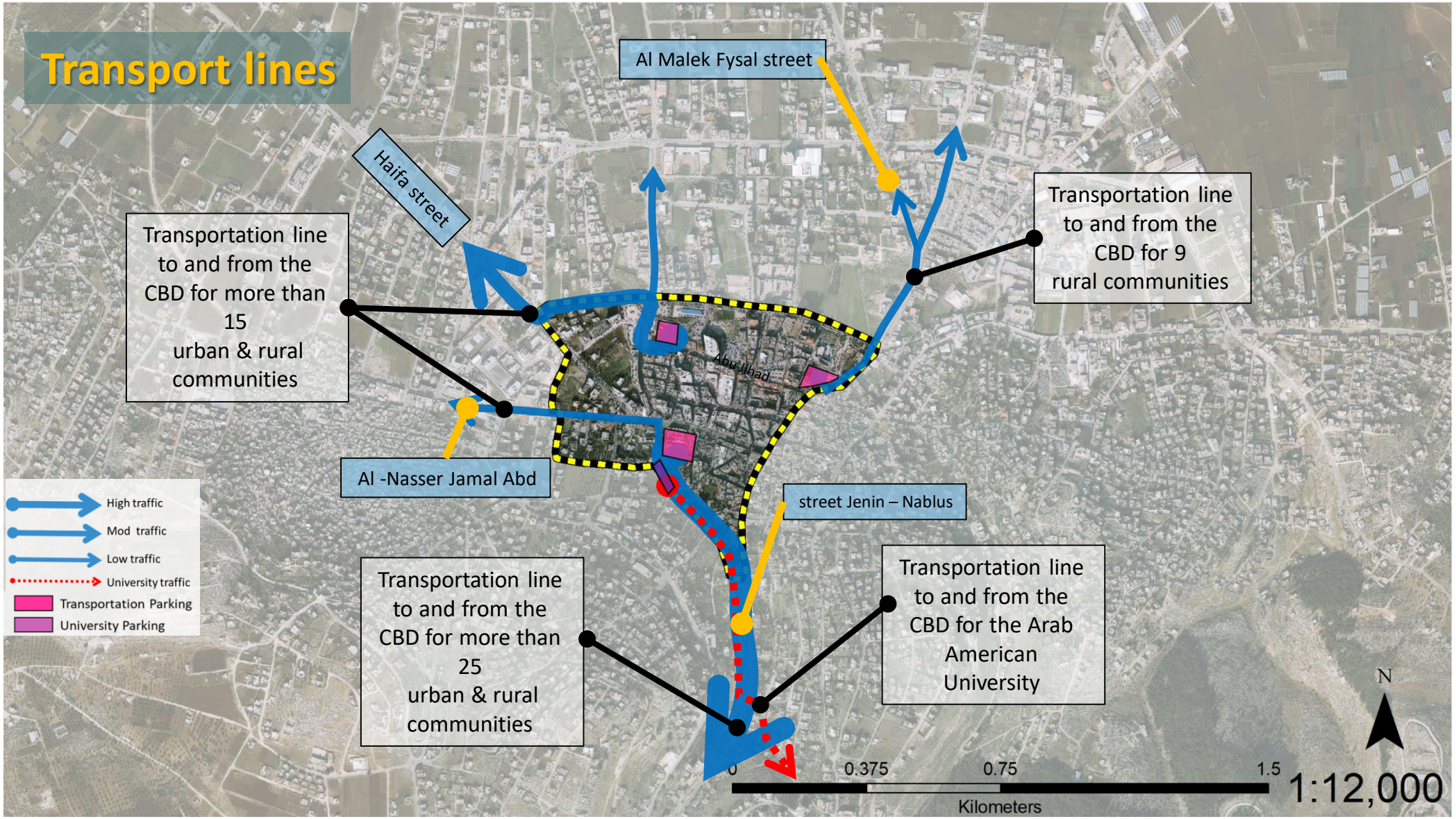
Zayed	PH	PHV	Pedestrian
North Approach	1:15 PM – 2:15 PM	908	175
South Approach	1:15 PM – 2:15 PM	472	189
East Approach	1:15 PM – 2:15 PM	329	476
West Approach	1:15 PM – 2:15 PM	574	148



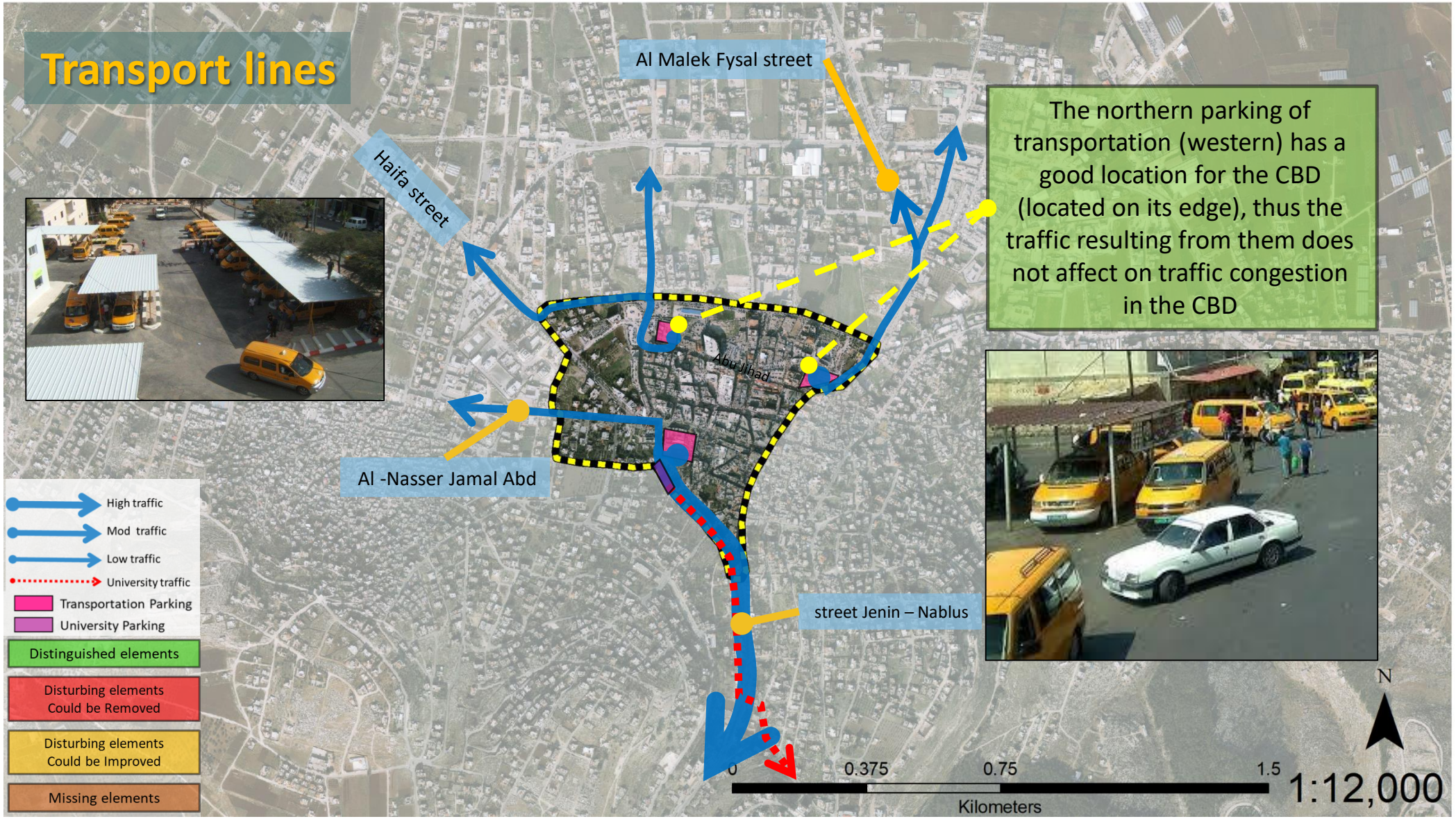
Naffa	PH	PHV	Pedestrian
North Approach	1:30 PM – 2:30 PM	614	49
South Approach	1:30 PM – 2:30 PM	817	22
West Approach	1:30 PM – 2:30 PM	1054	87



Al-Cinema	PH	PHV	Pedestrian
North Approach	12:00 PM – 1:00 PM	776	568
South Approach	12:00 PM – 1:00 PM	1121	837
East Approach	12:00 PM – 1:00 PM	777	350
West Approach	12:00 PM – 1:00 PM	883	219


Transport lines
Al Malek Fysal street
Haifa street
Transportation line to and from the CBD for more than 15 urban & rural communities
Transportation line to and from the CBD for 9 rural communities
Abu Jihad
Al -Nasser Jamal Abd
street Jenin – Nablus
Transportation line to and from the CBD for more than 25 urban & rural communities
Transportation line to and from the CBD for the Arab American University
High traffic
Mod traffic
Low traffic
University traffic
Transportation Parking
University Parking
0
0.375
0.75
1.5
Kilometers
1:12,000
N

Transport lines



Transport lines

University parking

Al Malek Fysal street

Haifa street

Abu Jihad

Al -Nasser Jamal Abd

street Jenin – Nablus

This parking of transportation is not a good location for the CBD because it Impedes of circulation within CBD causing traffic congestion greatly

High traffic

Mod traffic

Low traffic

University traffic

Transportation Parking

University Parking

Distinguished elements

Disturbing elements Could be Removed

Disturbing elements Could be Improved

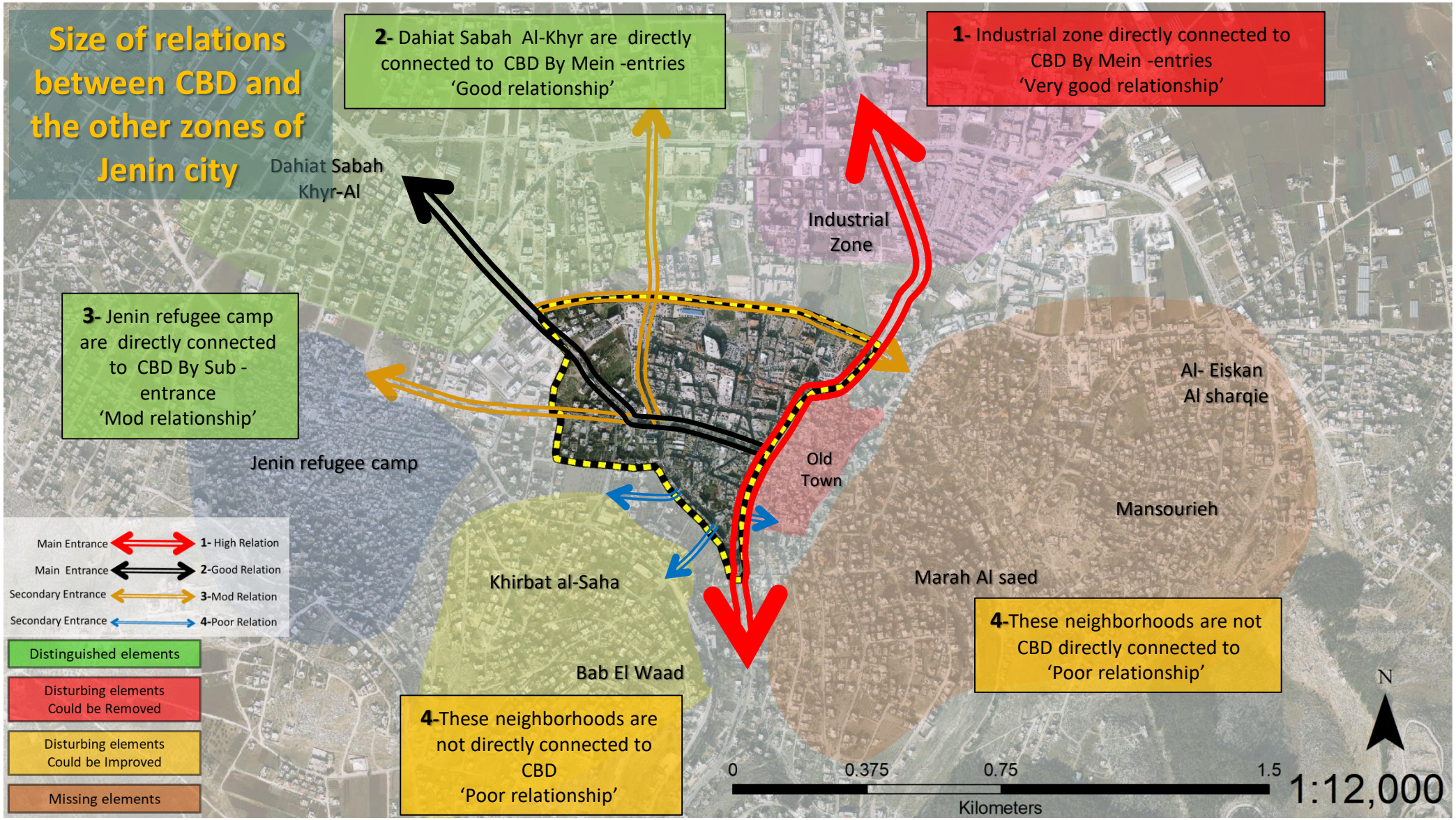
Missing elements

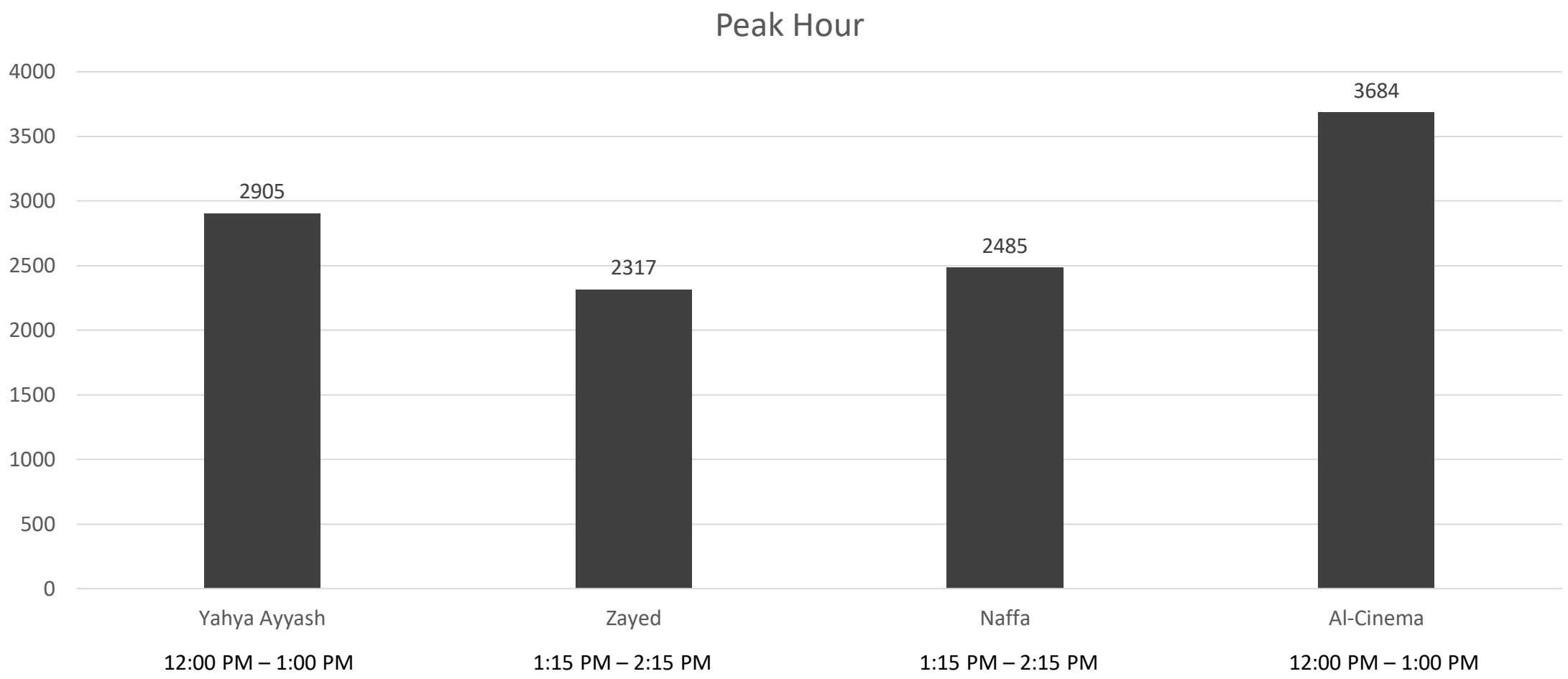
0 0.375 0.75 1.5

Kilometers

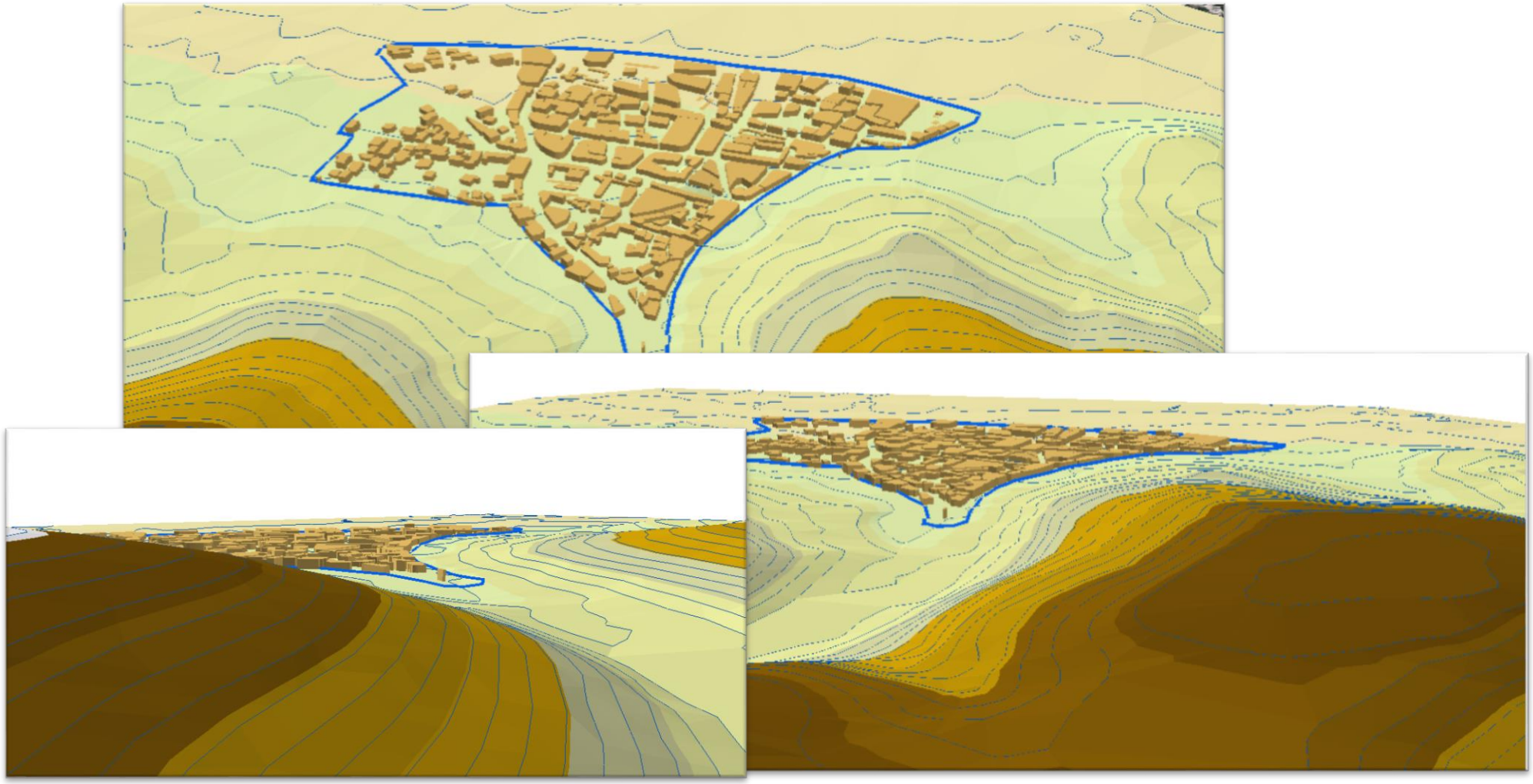
N

1:12,000


Size of relations between CBD and the other zones of Jenin city
2- Dahiat Sabah Al-Khyr are directly connected to CBD By Mein -entries 'Good relationship'
1- Industrial zone directly connected to CBD By Mein -entries 'Very good relationship'
Dahiat Sabah Khyr-Al
Industrial Zone
3- Jenin refugee camp are directly connected to CBD By Sub - entrance 'Mod relationship'
Al- Eiskan Al sharqie
Jenin refugee camp
Old Town
Mansourieh
Main Entrance
1- High Relation
Main Entrance
2-Good Relation
Secondary Entrance
3-Mod Relation
Secondary Entrance
4-Poor Relation
Khirbat al-Saha
Marah Al saed
4-These neighborhoods are not CBD directly connected to 'Poor relationship'
Distinguished elements
Disturbing elements Could be Removed
Disturbing elements Could be Improved
Missing elements
Bab El Waad
4-These neighborhoods are not directly connected to CBD 'Poor relationship'
N
0
0.375
0.75
1.5
Kilometers
1:12,000

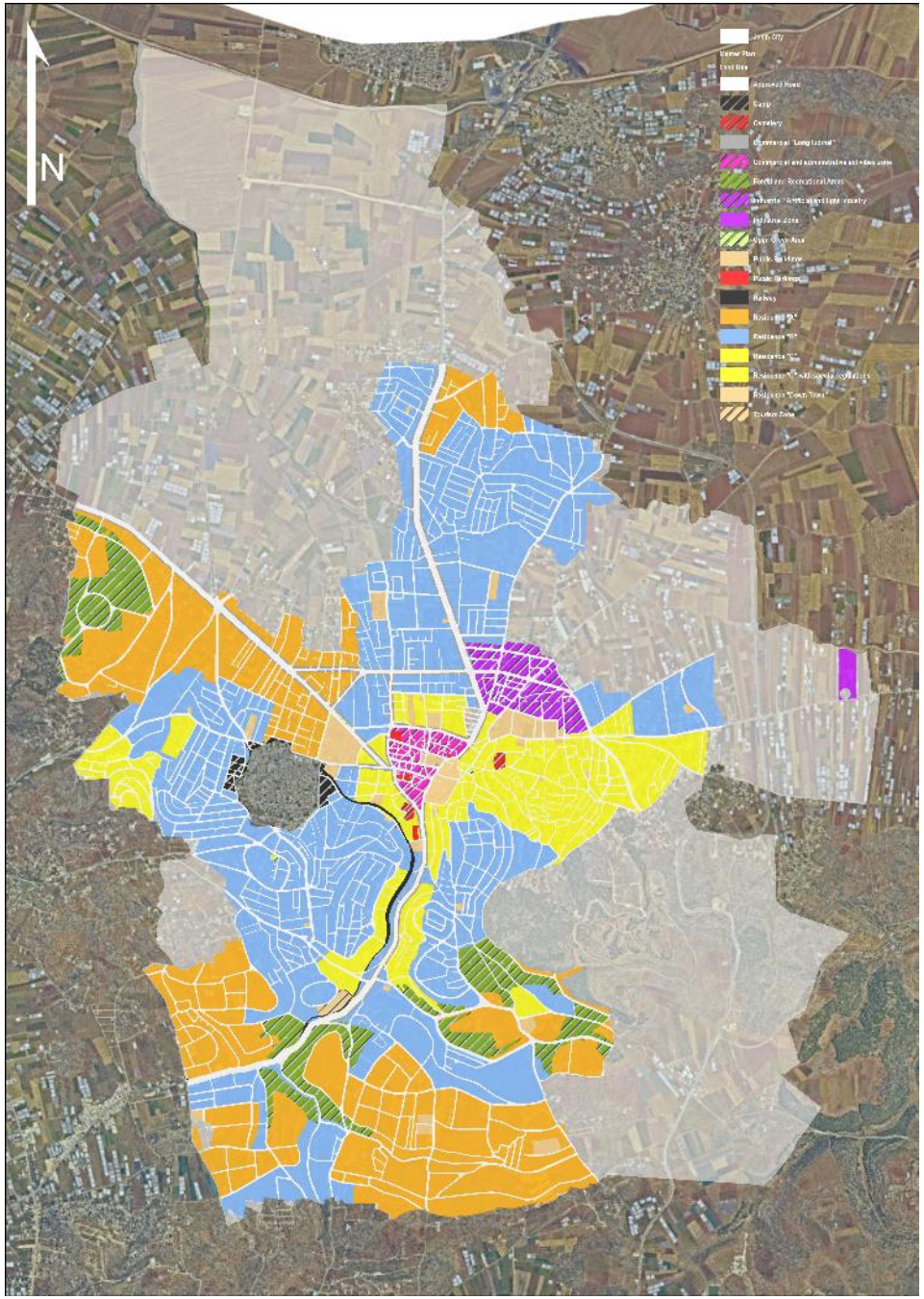

Peak Hour
4000
3500
3000
2500
2000
1500
1000
500
0
2905
2317
2485
3684
Yahya Ayyash
Zayed
Naffa
Al-Cinema
12:00 PM – 1:00 PM
1:15 PM – 2:15 PM
1:15 PM – 2:15 PM
12:00 PM – 1:00 PM

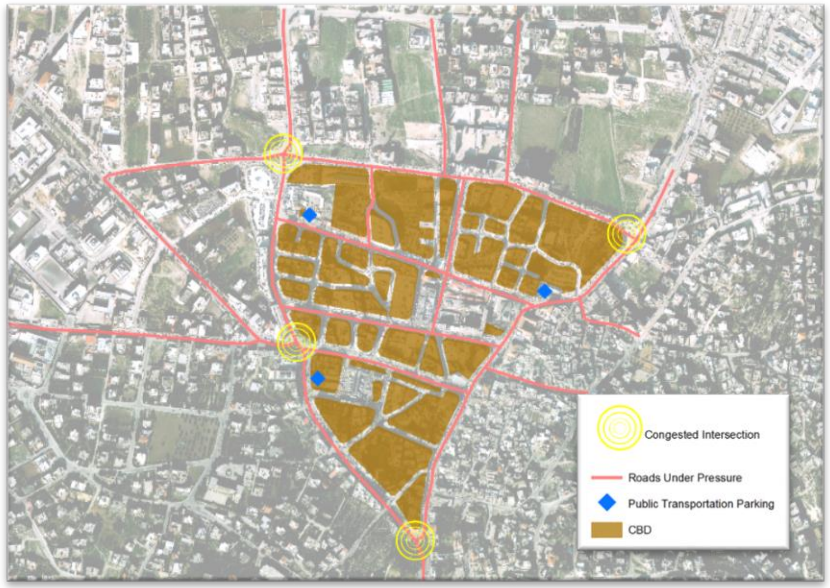
Jenin CBD Topography

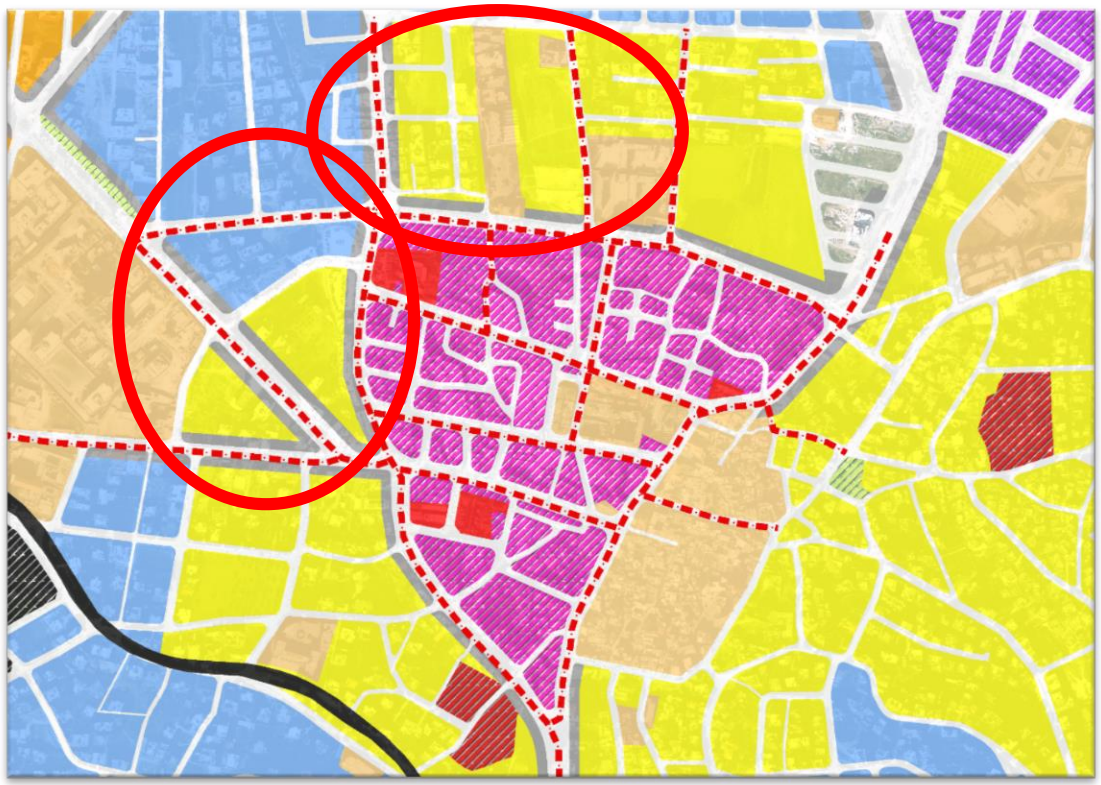


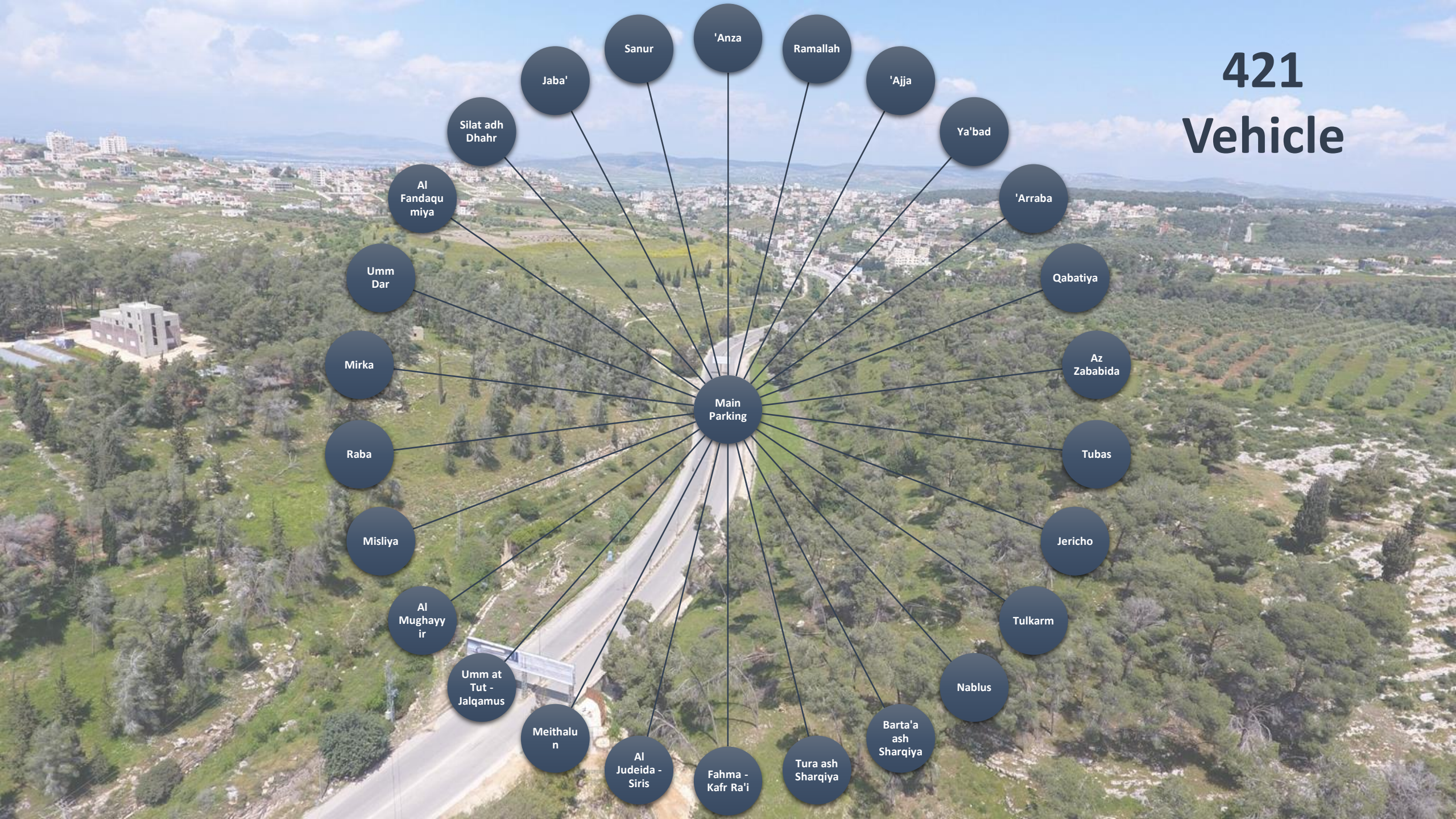
ANALYSIS & STRATEGIC PLANNING

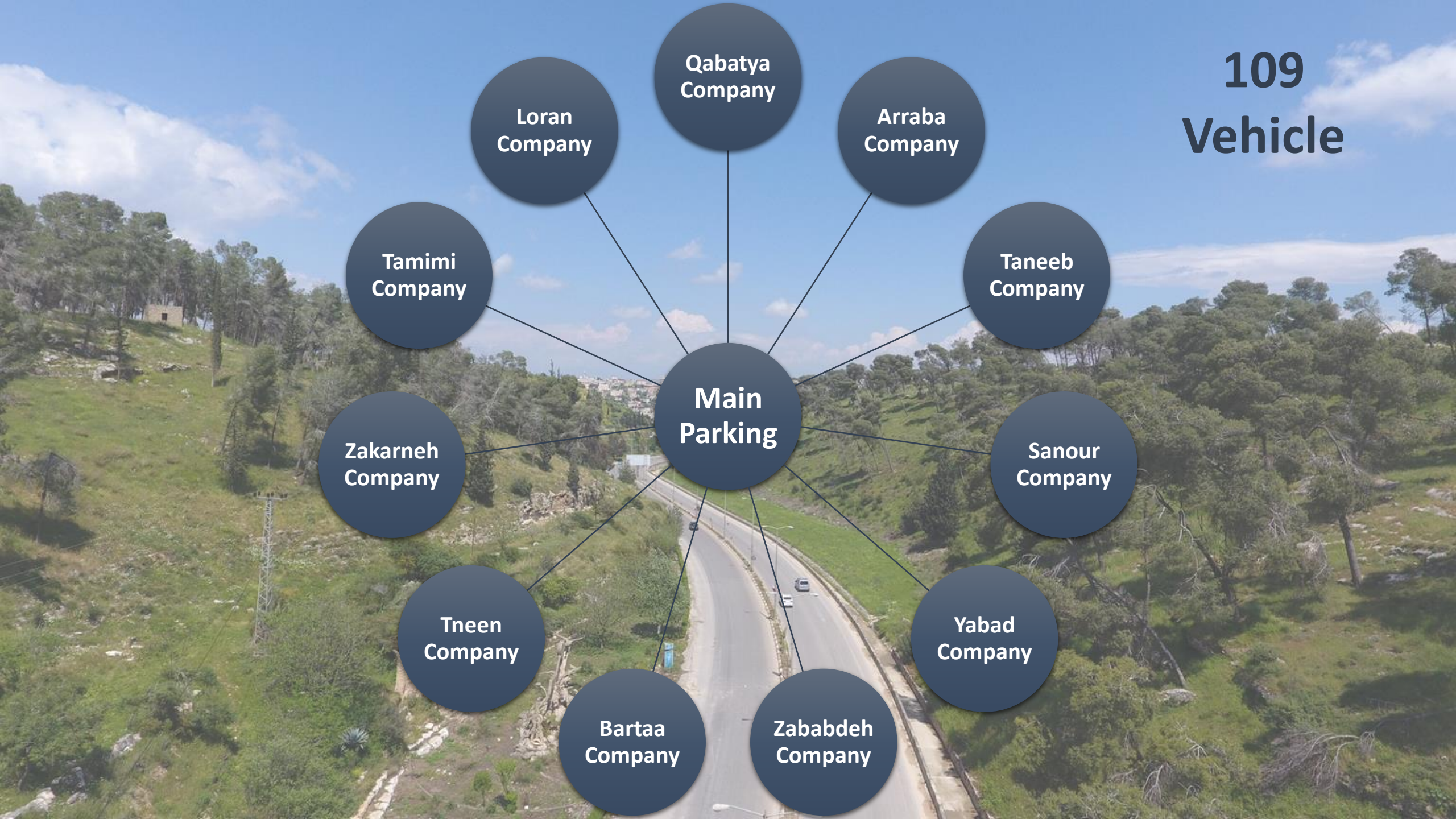
SWOT Analysis → Positive Map → Negative Map


N


Congested Intersection
Roads Under Pressure
Public Transportation Parking
CBD



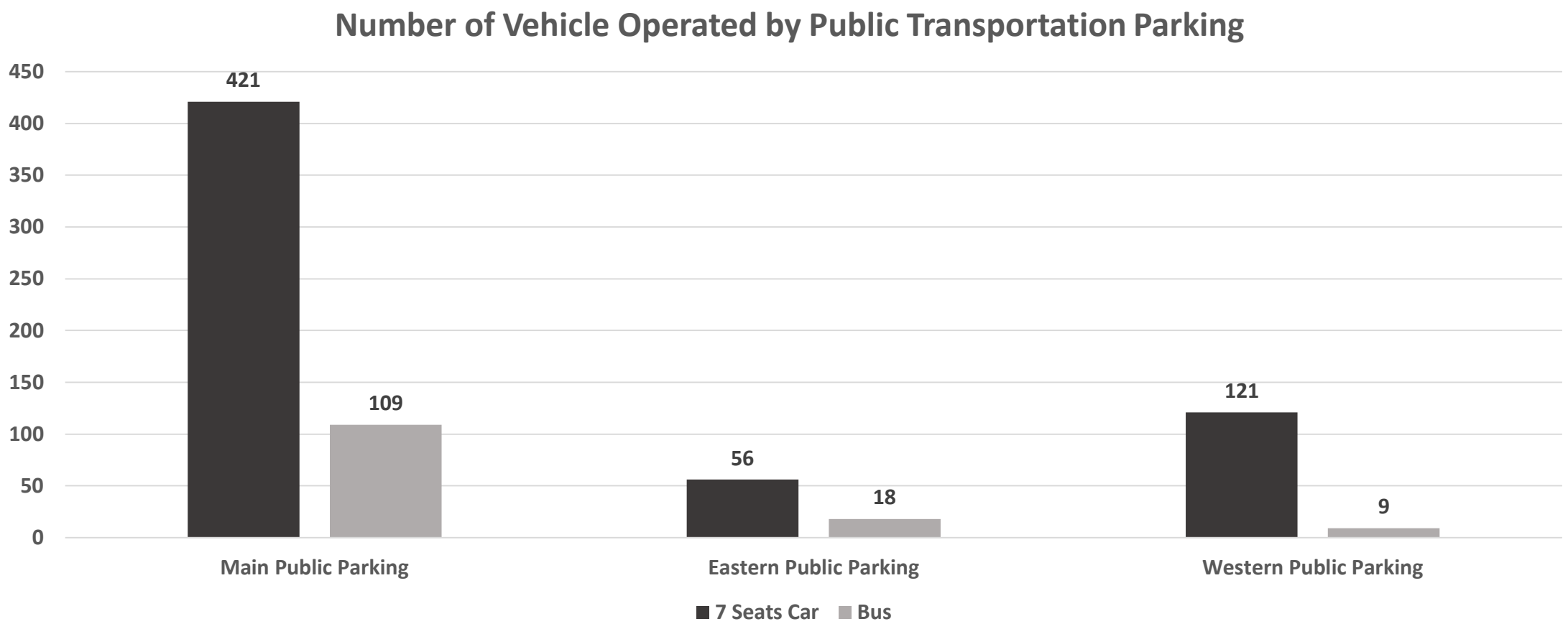

421
Vehicle
Main Parking
'Anza
Ramallah
'Ajja
Ya'bad
'Arraba
Qabatiya
Az Zababida
Tubas
Jericho
Tulkarm
Nablus
Barta'a ash Sharqiya
Tura ash Sharqiya
Fahma - Kafr Ra'i
Al Judeida - Siris
Meithalun
Umm at Tut - Jalqamus
Al Mughayyir
Misliya
Raba
Mirka
Umm Dar
Al Fandaqumiya
Silat adh Dhahr
Jaba'
Sanur

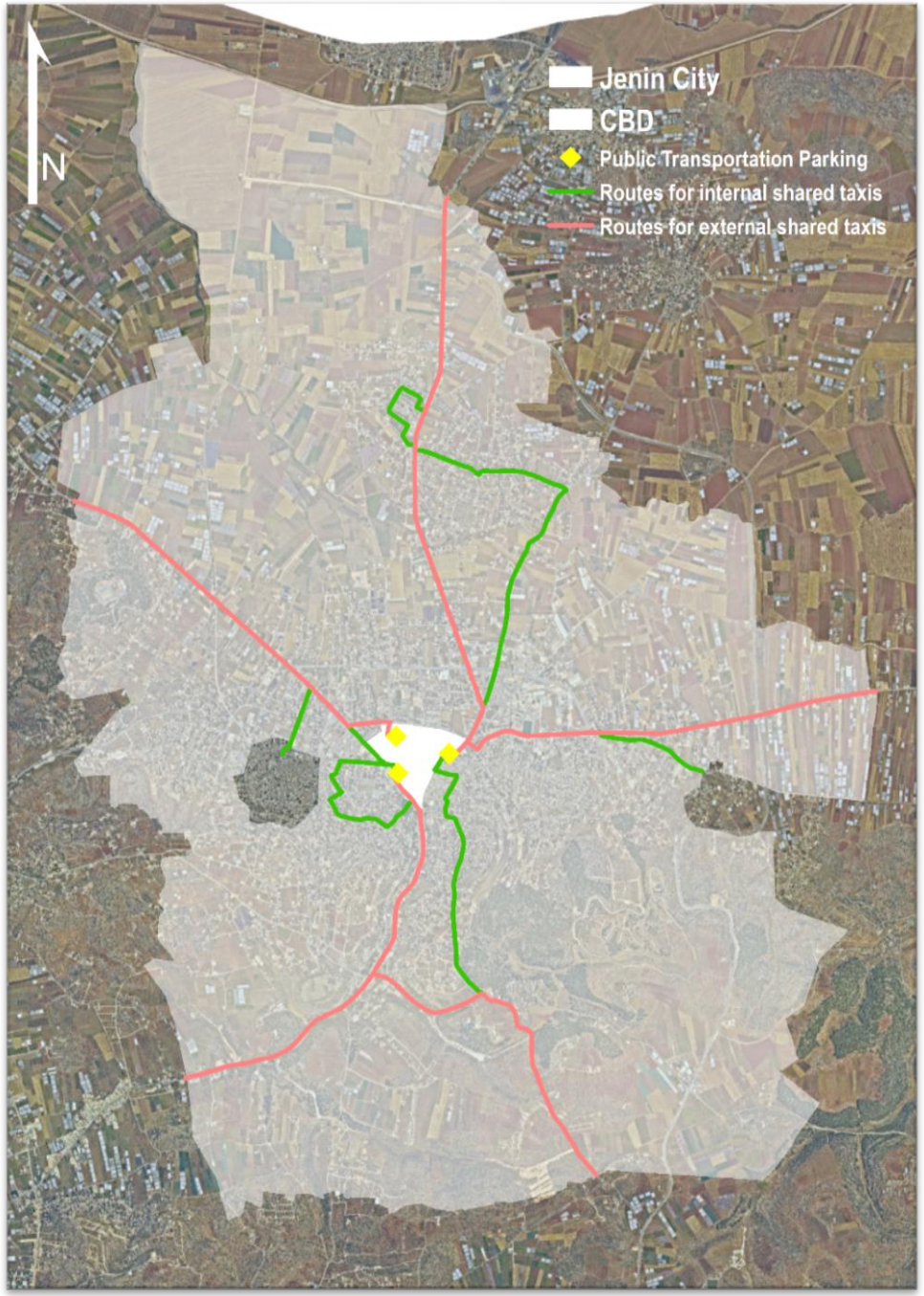

109
Vehicle
Qabatya Company
Loran Company
Arraba Company
Tamimi Company
Taneeb Company
Main Parking
Zakarneh Company
Sanour Company
Tneen Company
Yabad Company
Bartaa Company
Zababdeh Company

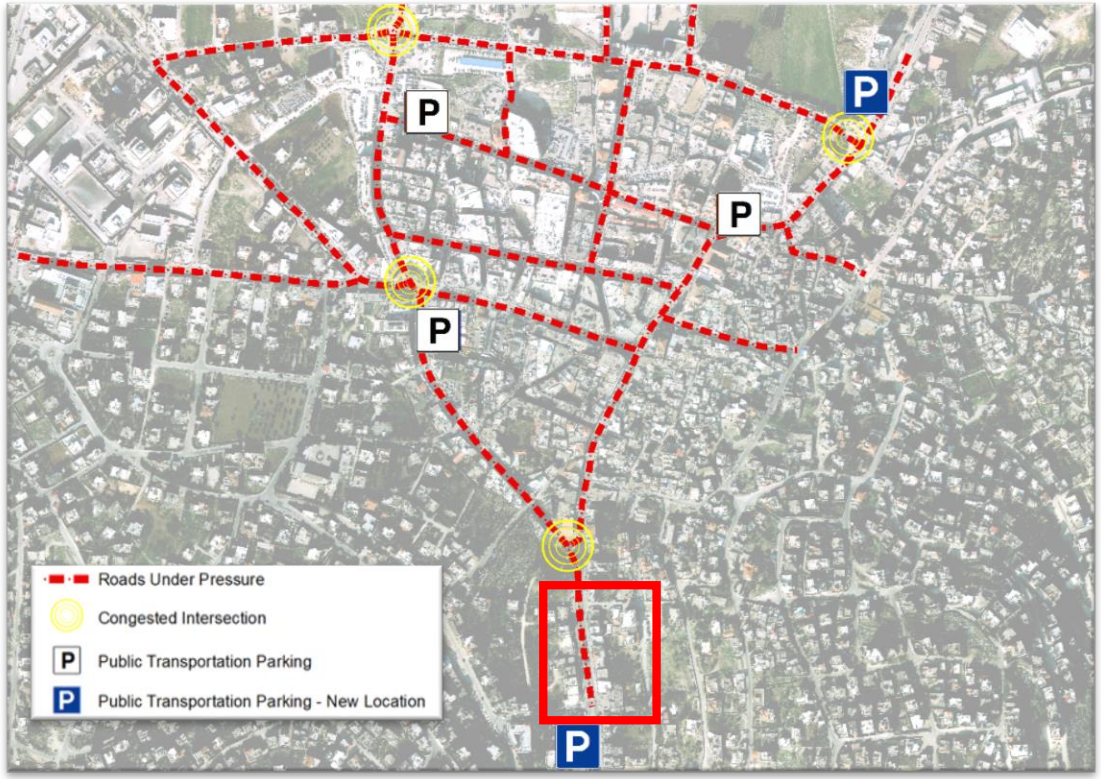
56
Vehicle
Faqqu'a
'Aba
Beit Qad
'Arabbuna
Eastern Parking
Deir Abu Da'if
'Arrana
Deir Ghazala
Al Jalama
Jalbun

121
Vehicle
Kufeirit
Rummana - Zububa
Ti'innik - 'Anin
Silat el Harithiya
Birqin
Western Parking
Al Yamun
Al 'Araqa
Kafr Qud
Al Hashimiya
Kafr Dan
At Tayba

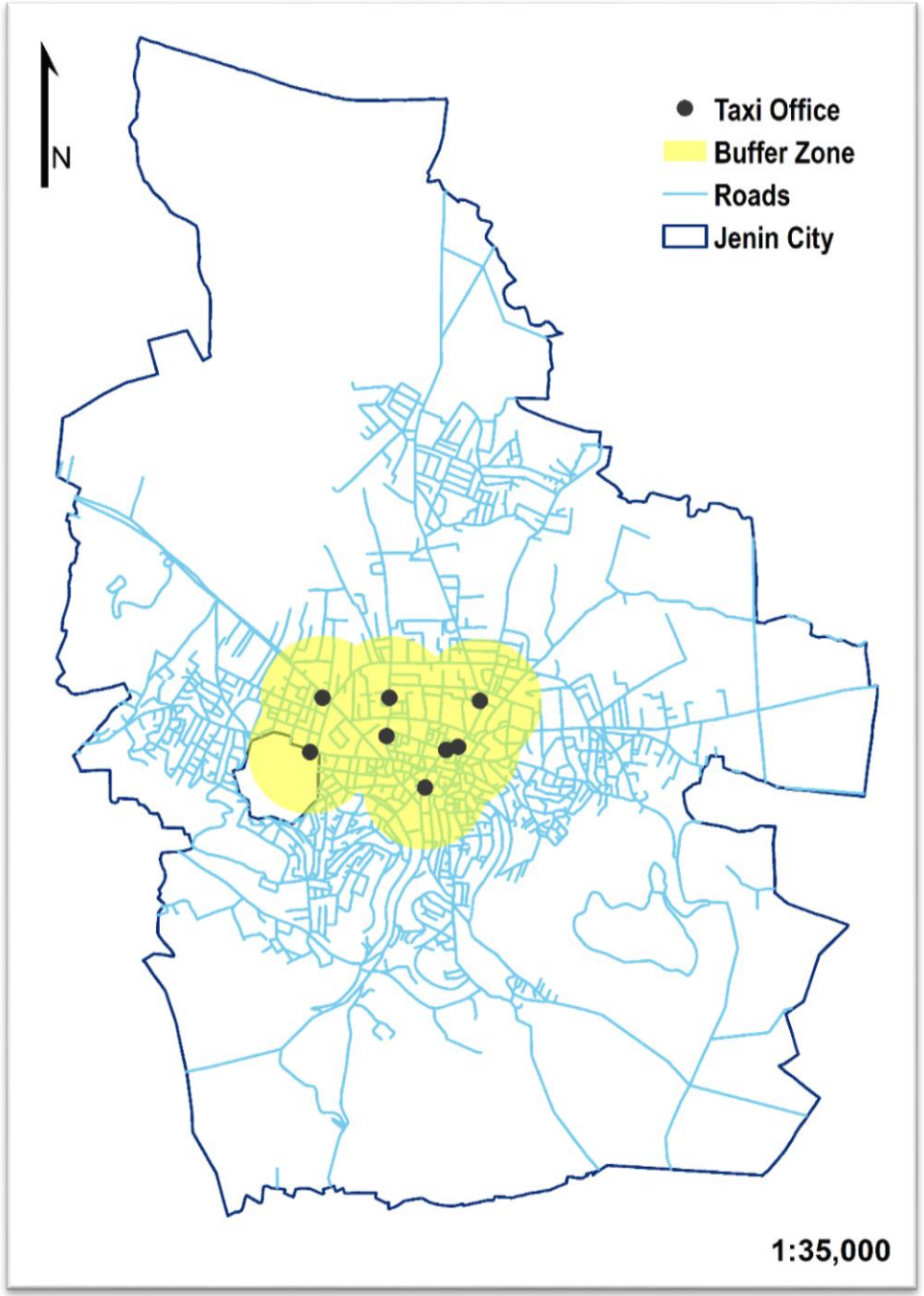
18
Vehicle
Abu Farha Company
Eastern Parking
Raba Company
Burqin Company

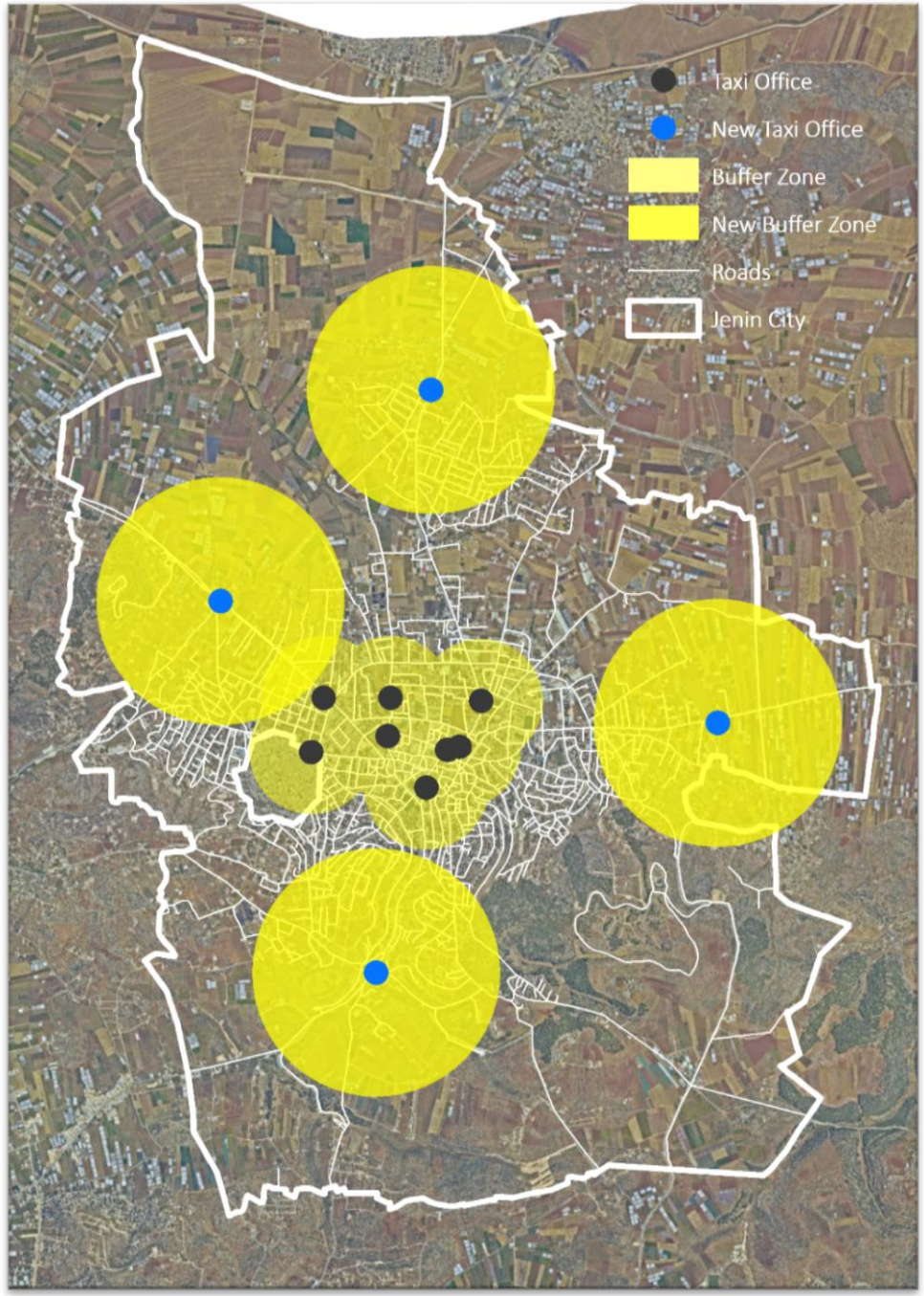

Number of Vehicle Operated by Public Transportation Parking
450
400
350
300
250
200
150
100
50
0
421
109
56
18
121
9
Main Public Parking
Eastern Public Parking
Western Public Parking
7 Seats Car
Bus

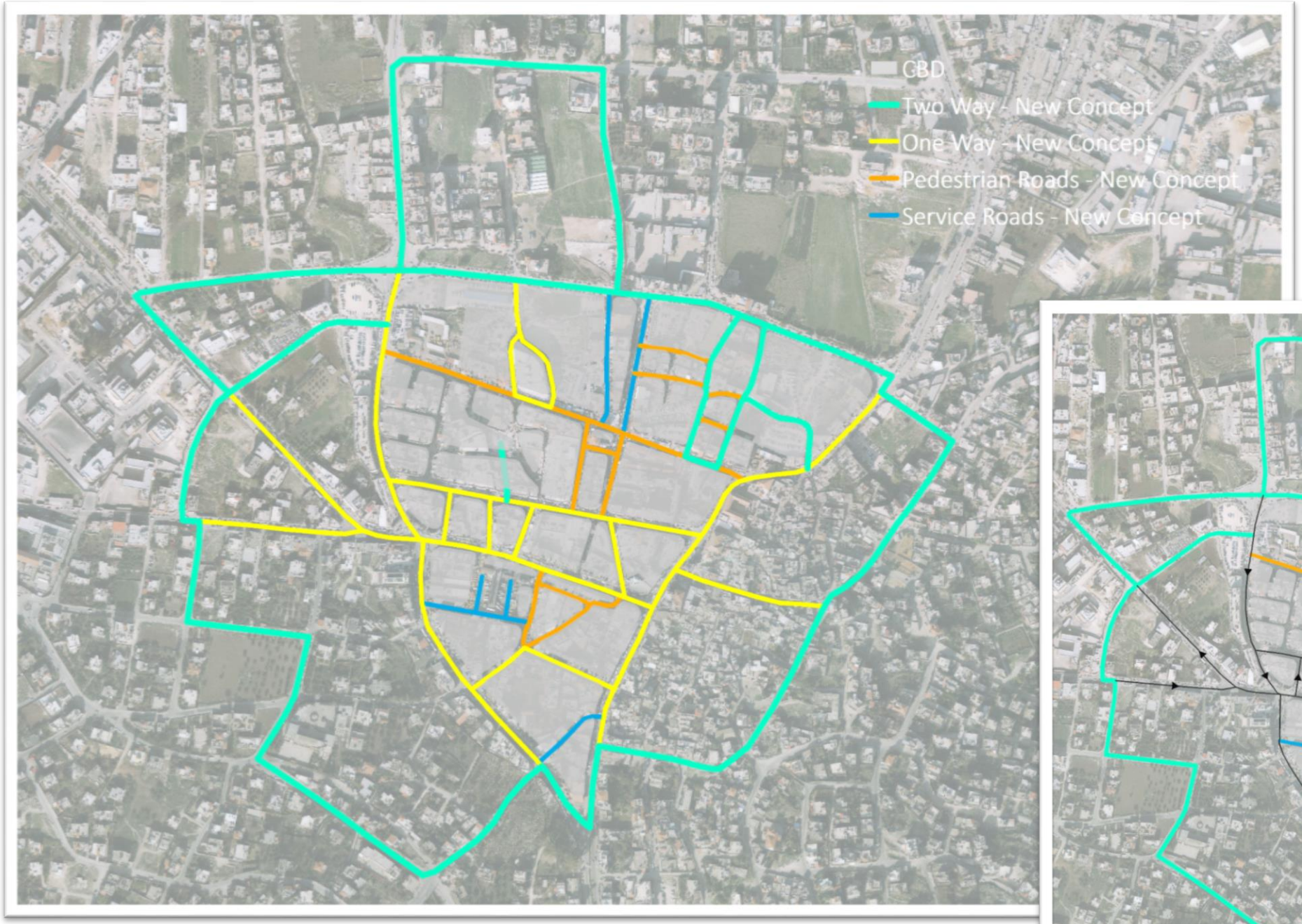

N
Jenin City
CBD
Public Transportation Parking
Routes for internal shared taxis
Routes for external shared taxis

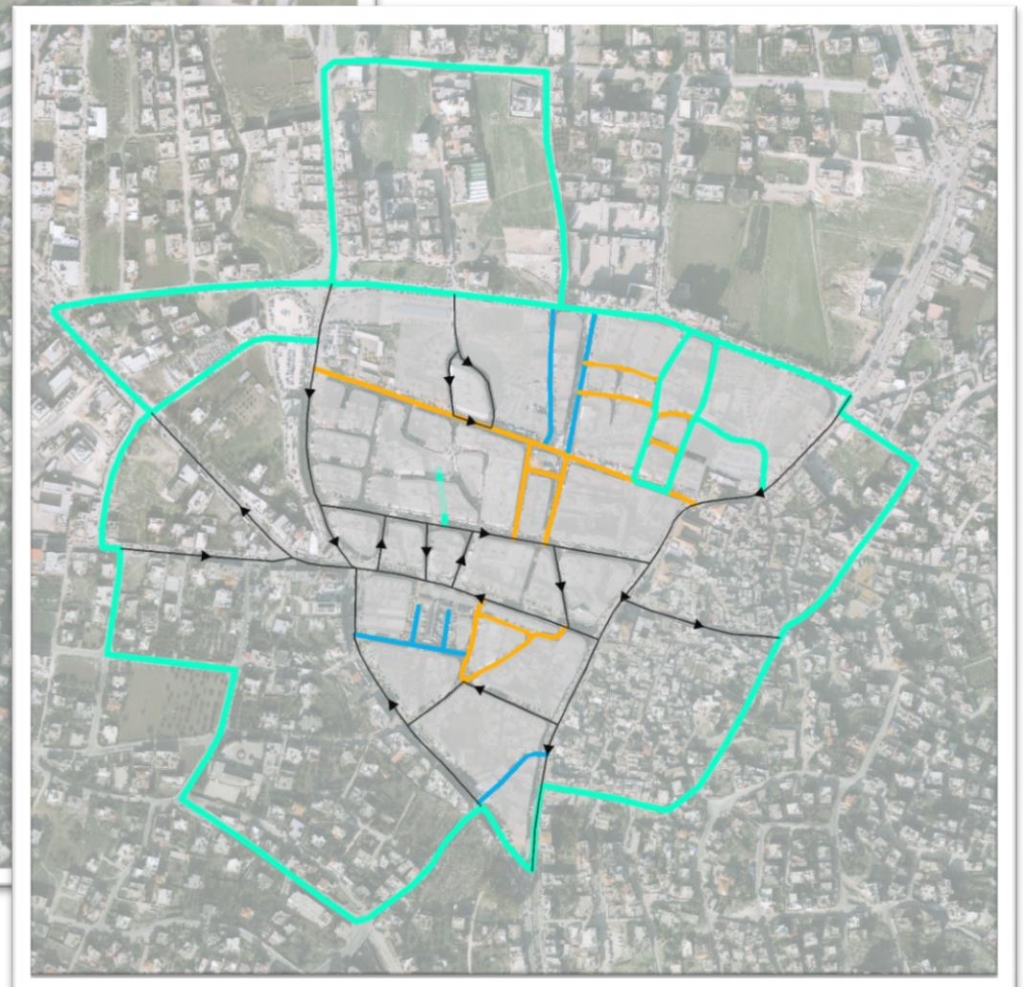

P
P
P
P
P
Roads Under Pressure
Congested Intersection
Public Transportation Parking
Public Transportation Parking - New Location

Expantion
Old Boundary


N
Taxi Office
Buffer Zone
Roads
Jenin City
1:35,000


Taxi Office
New Taxi Office
Buffer Zone
New Buffer Zone
Roads
Jenin City

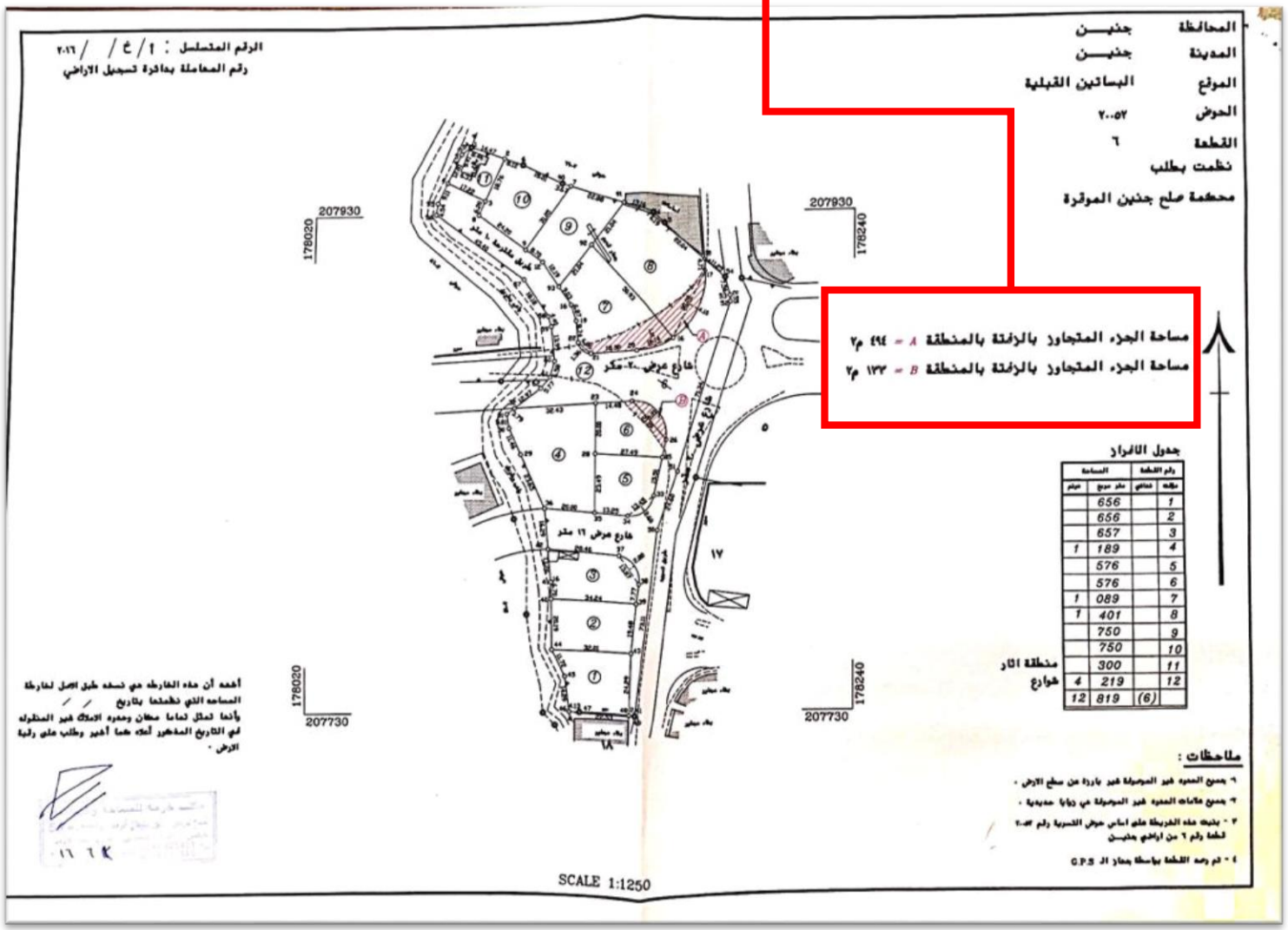

CBD
Two Way - New Concept
One Way - New Concept
Pedestrian Roads - New Concept
Service Roads - New Concept



Governorate: Jenin
City: Jenin
Location: To the west of the CBD
Block: 20052
Parcel: 6

Design Problems

Area of deduction = 627 Square Meter!



المحافظة جنين
المدينة جنين
الموقع البساتين القبلية
الحوض ٢٠٠٥٢
القطعة ٦
نظمت بطلب
محكمة صلح جنين الموقرة

الرقم المتسلسل : ١ / ع / / ٢٠١٦
رقم المعاملة بدائرة تسجيل الاراضي

مساحة الجزء المتجاوز بالزقاق بالمنطقة A = ٤٩٤ م٢
مساحة الجزء المتجاوز بالزقاق بالمنطقة B = ١٣٣ م٢

جدول الافراز

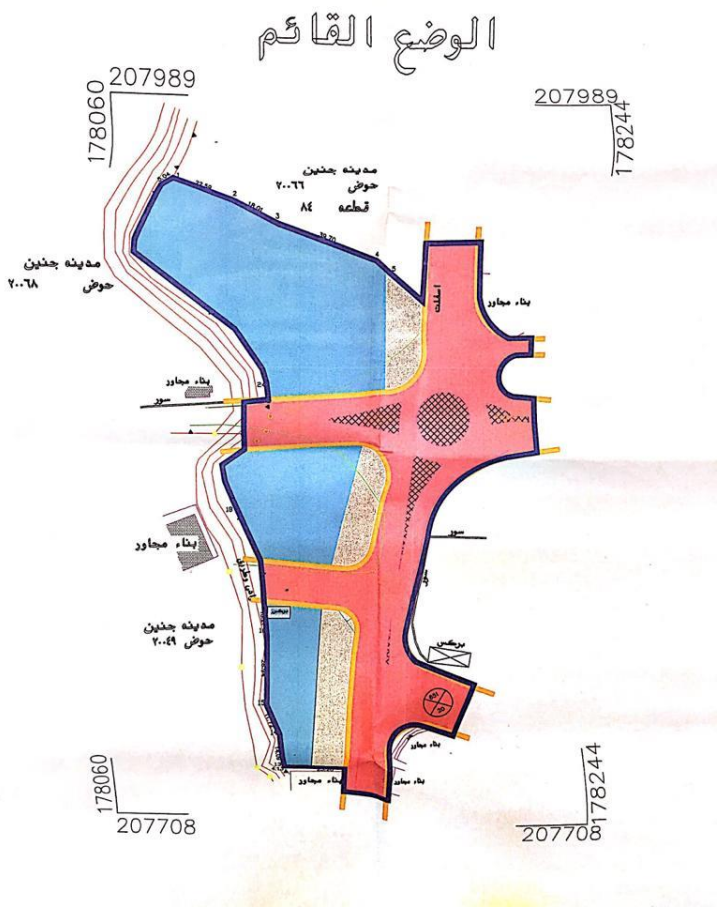
رقم القطعة		المساحة	
مؤقتة	نهائي	متر مربع	دونم
1		656	
2		656	
3		657	
4		189	1
5		576	
6		576	
7		089	1
8		401	1
9		750	
10		750	
11		300	
12		219	4
منطقة آثار شوارع	(6)	819	12

ملاحظات :
١ - جميع المنحنيات غير الموضحة غير بارزة عن سطح الارض .
٢ - جميع مقاسات المنحنيات غير الموضحة هي زوايا حديدية .
٣ - بنيت هذه الخريطة على اساس حوض القسرية رقم ٢٠٠٥٢ قطعة رقم ٦ من اراضي جنين
٤ - تم رصد القطعة بواسطة جهاز الـ G.P.S

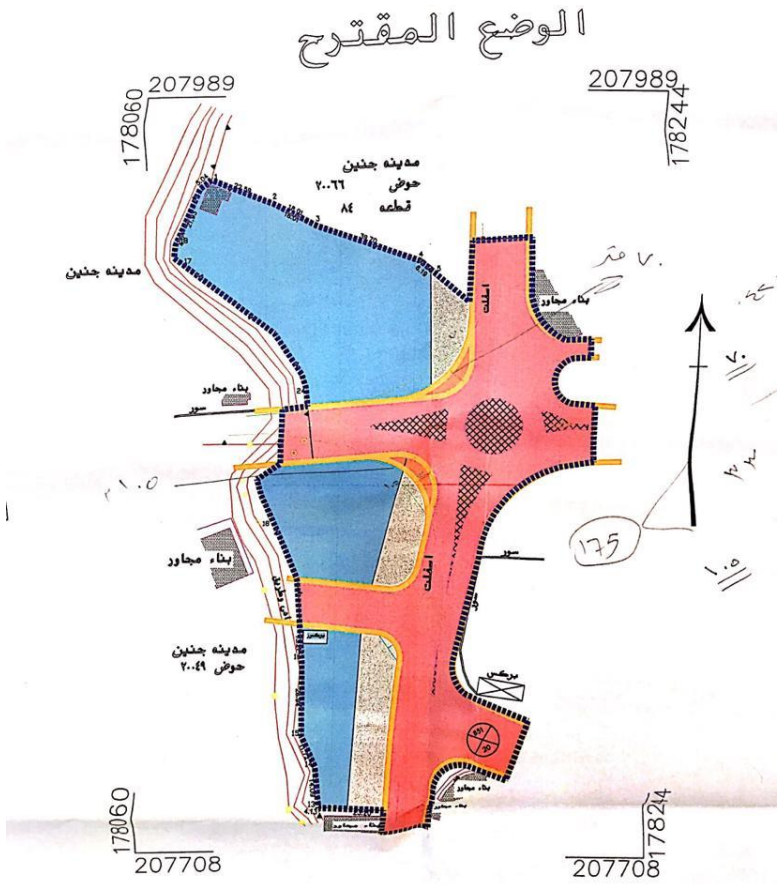
أشهد أن هذه الخارطة هي نسخة طبق الاصل لخارطة المساحة التي نظمتها بتاريخ / /
وأنها تمثل تماما مكان وحدود الاملاك غير المنقولة في التاريخ المذكور أعلاه هما أخير وطلب على رقبة الارض .

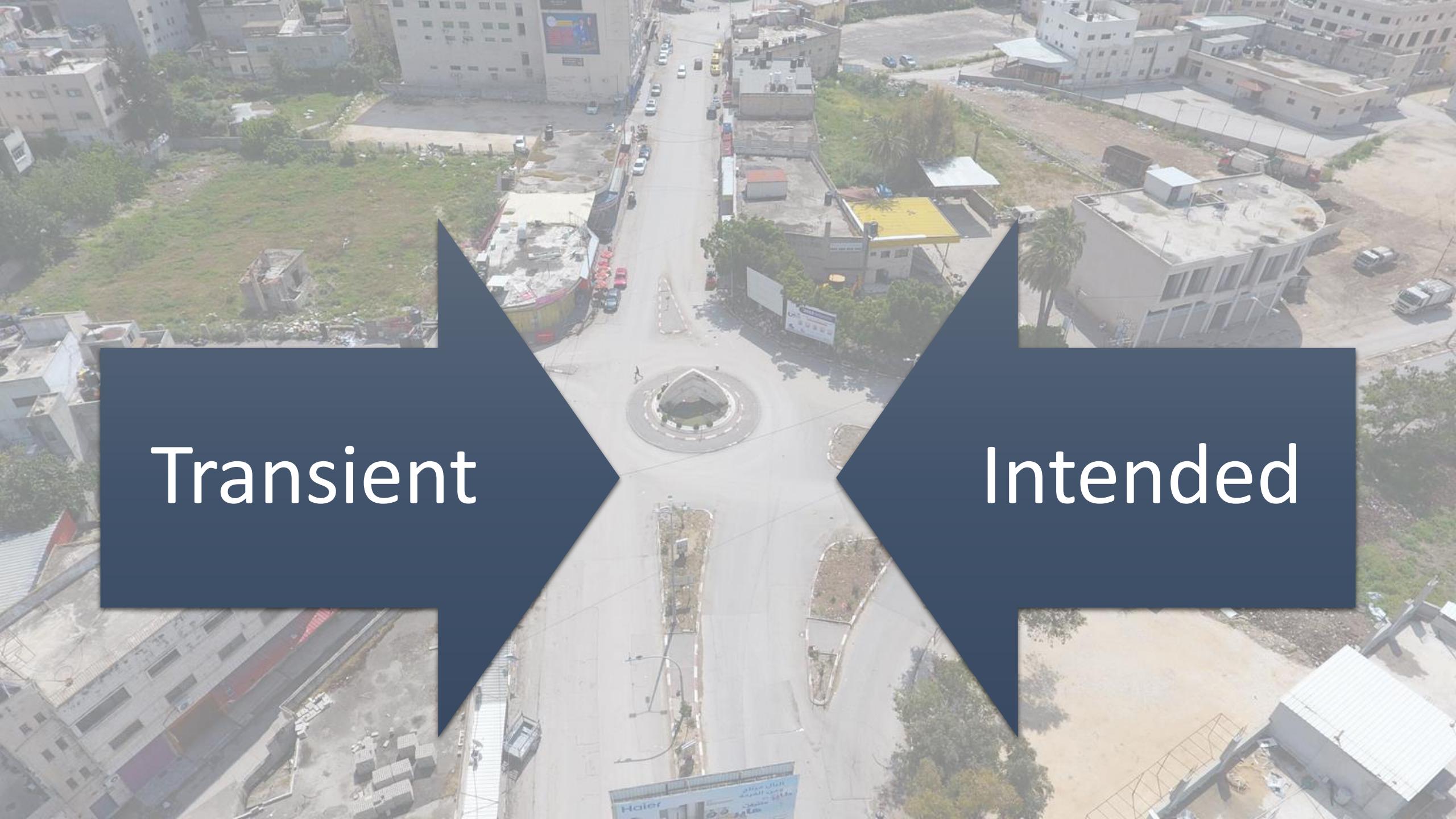
SCALE 1:1250

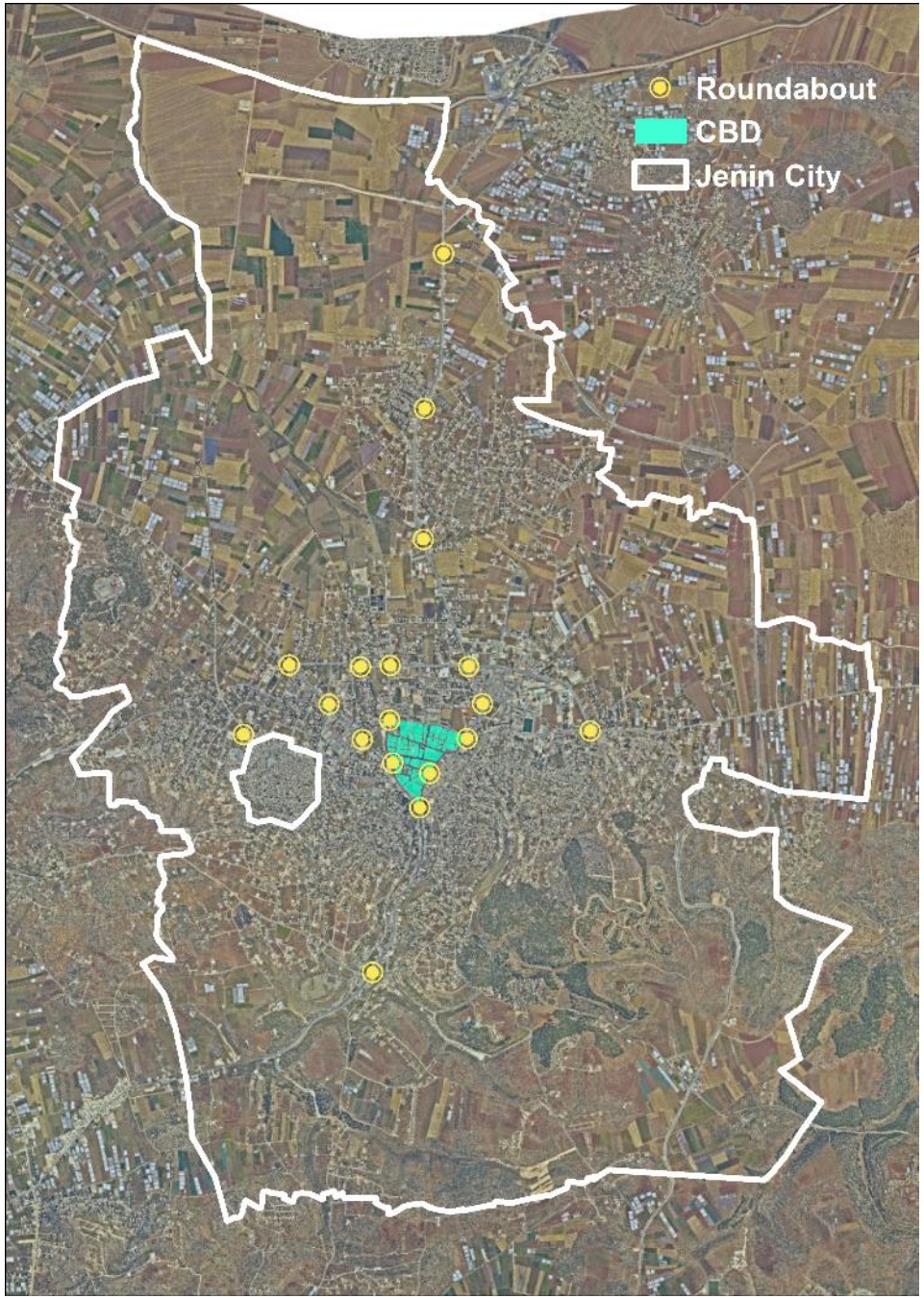
Jenin municipality didn't allow a soft copy

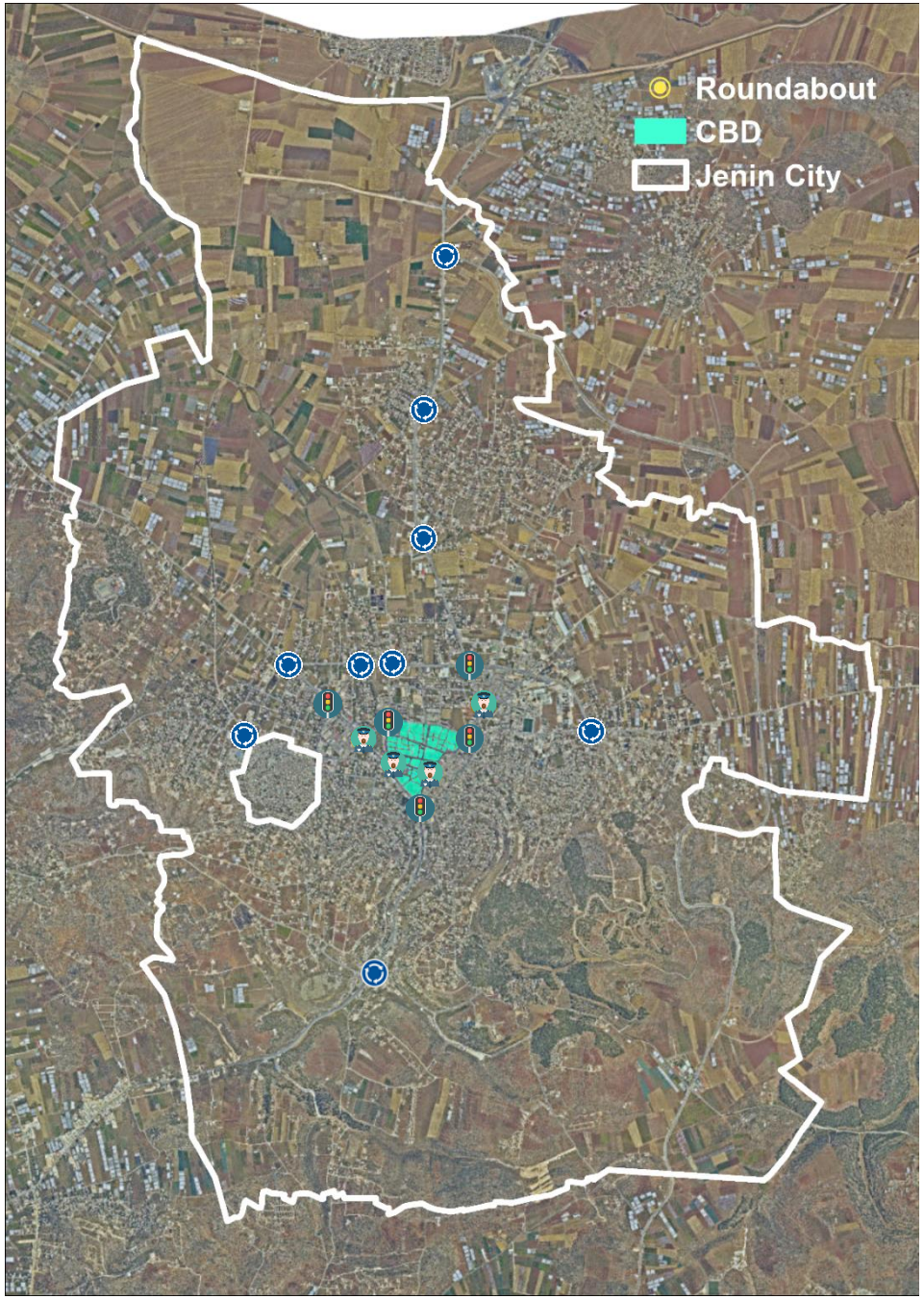


Violated legally



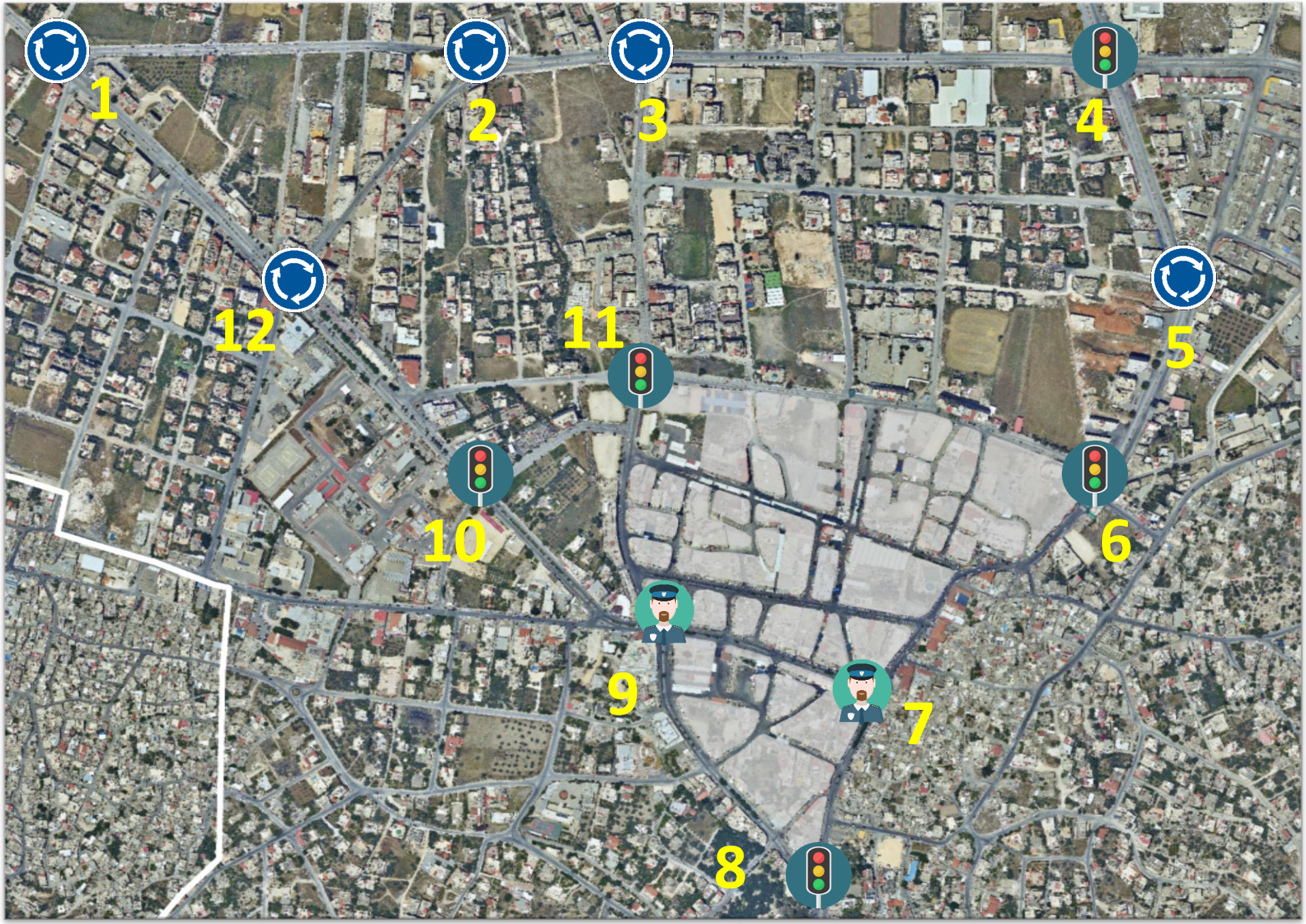

Transient
Intended
Haier


Roundabout
CBD
Jenin City


Roundabout
CBD
Jenin City

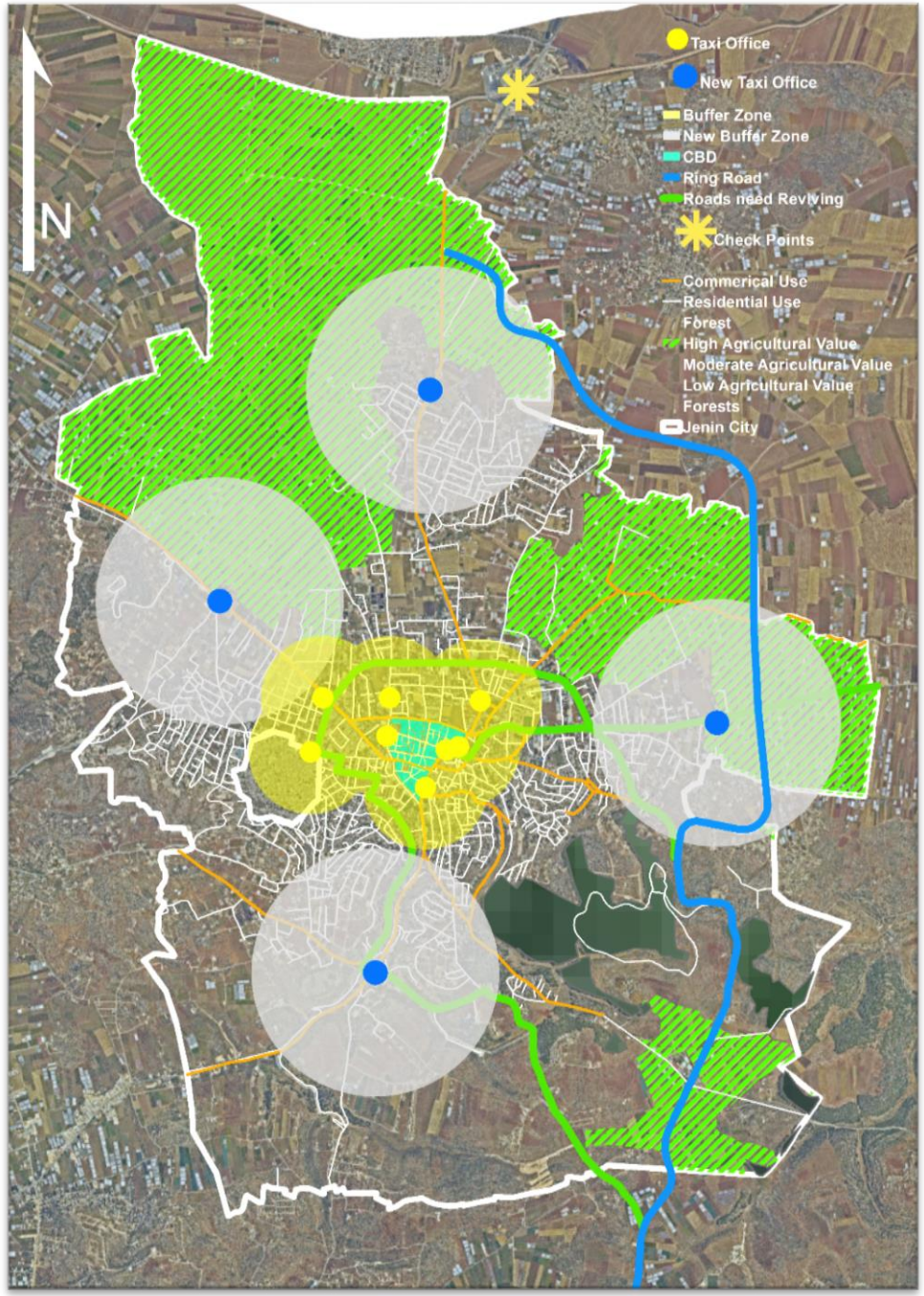
This map is due

Intersection Number	Level of Service
1	C
2	C
3	C
4	D
5	C
6	F
7	F
8	F
9	F
10	D
11	F
12	C



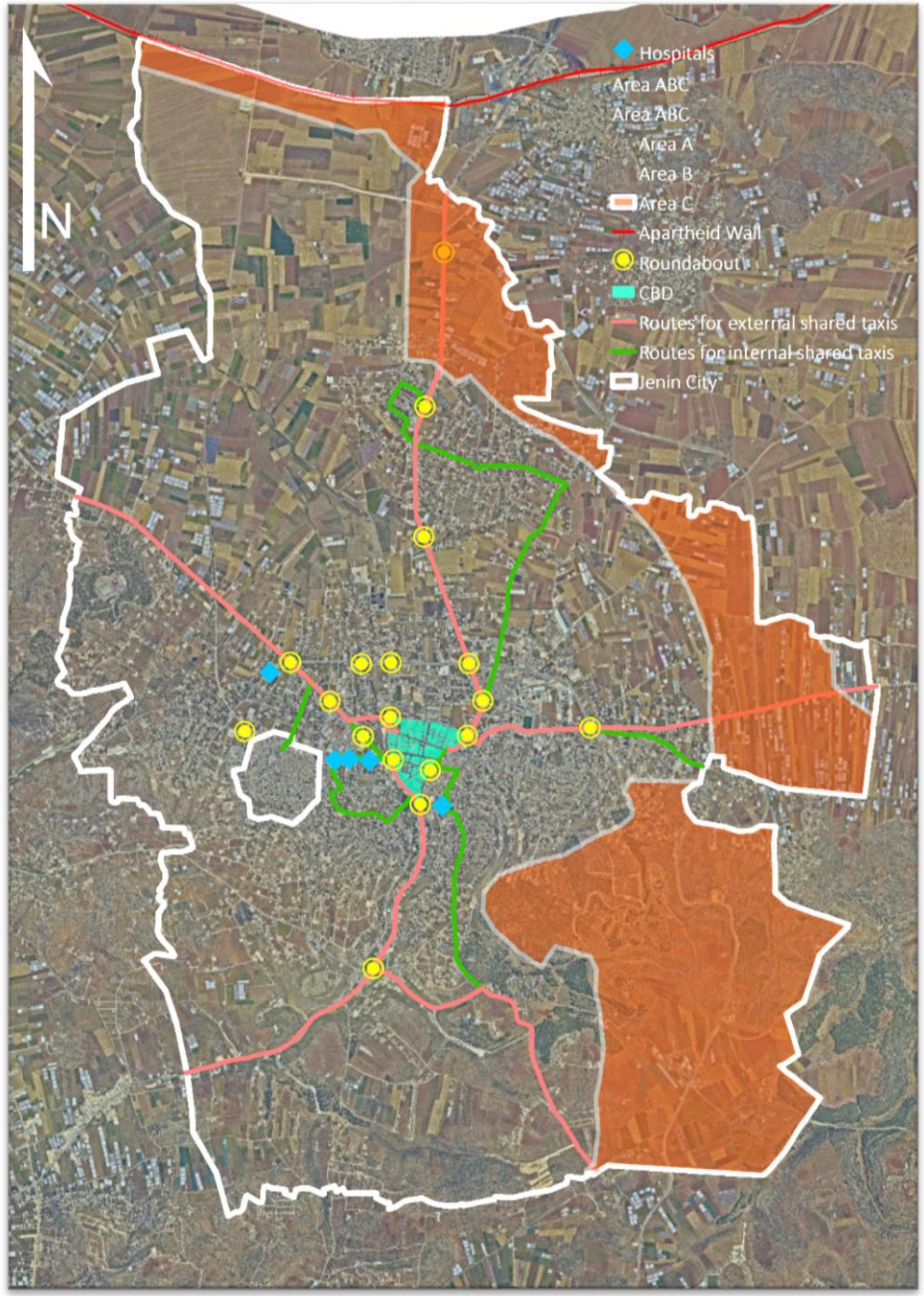
Positive Map

- Public transport coverage for most city areas in the city
- Respect for high value agricultural land
- Forest protection
- Exploitation of the ring road without harming agricultural land
- Fair distribution of commercial areas



Negative Map

- Inability to organize comfortably in the eastern region
- A large number of intersections in the city of Jenin
- Unbalanced distribution of hospitals



Main Goals

Economic Benefits	Social Benefits	Environmental Benefits
Savings in transportation costs	Improved transportation options and choices	Green space
Increasing the demand for public services	Community cohesion	Reduced air pollution
Transfer more efficient	Increased physical activity and health	Reduced resource consumption
	Congestion reduction	Reduced water pollution
		Reduced “heat Island” effect

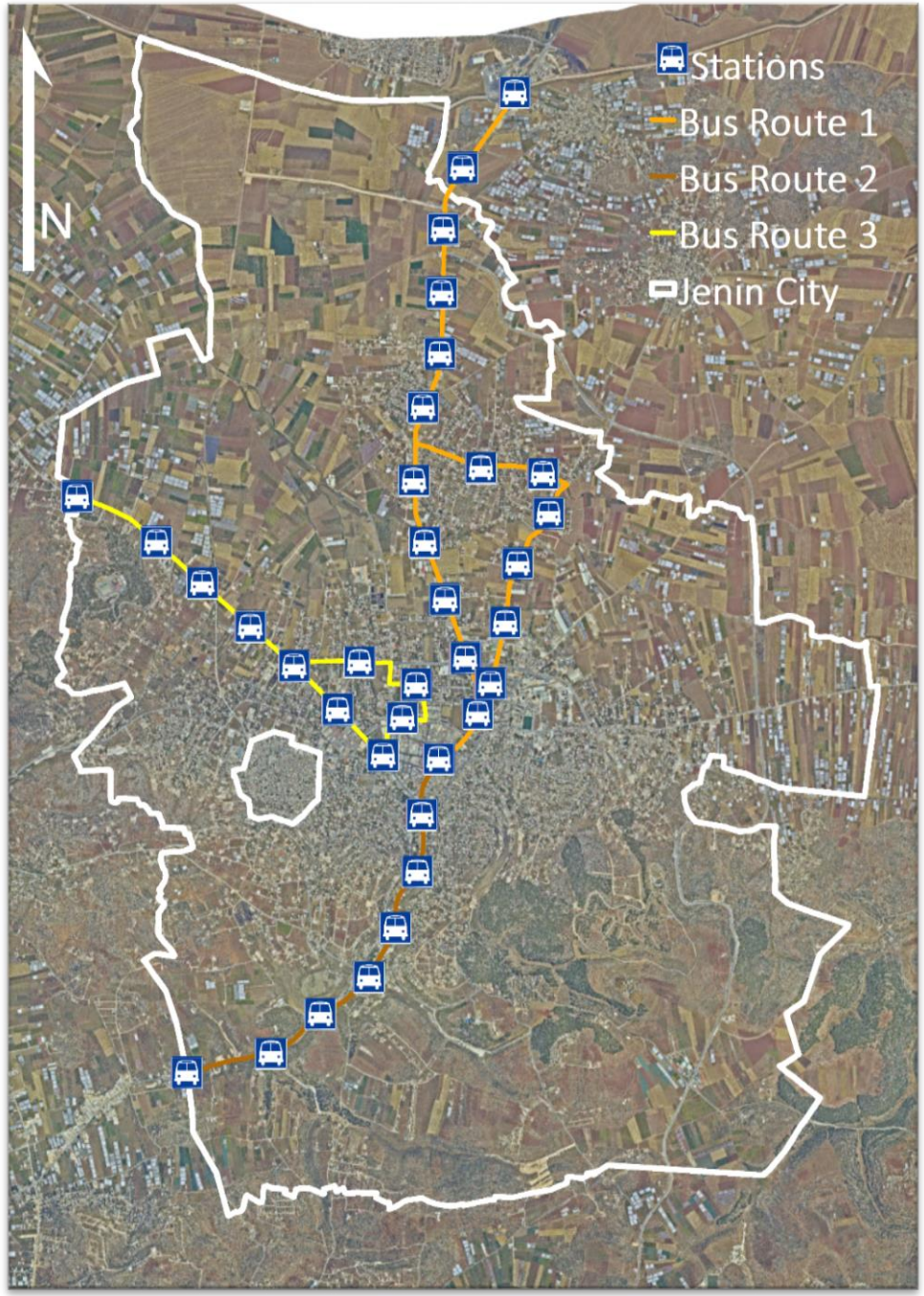
Issues (Strengths & Weaknesses)

- Need to reduce traffic in residential areas
- Provide service lines to serve the city
- Low accessibility levels
- Reviving traffic on several streets
- Air and noise pollution on main roads
- Streets landscaping needs
- High traffic congestion on main connecting roads
- Safety requirements
- Prevent horizontal height in the center area

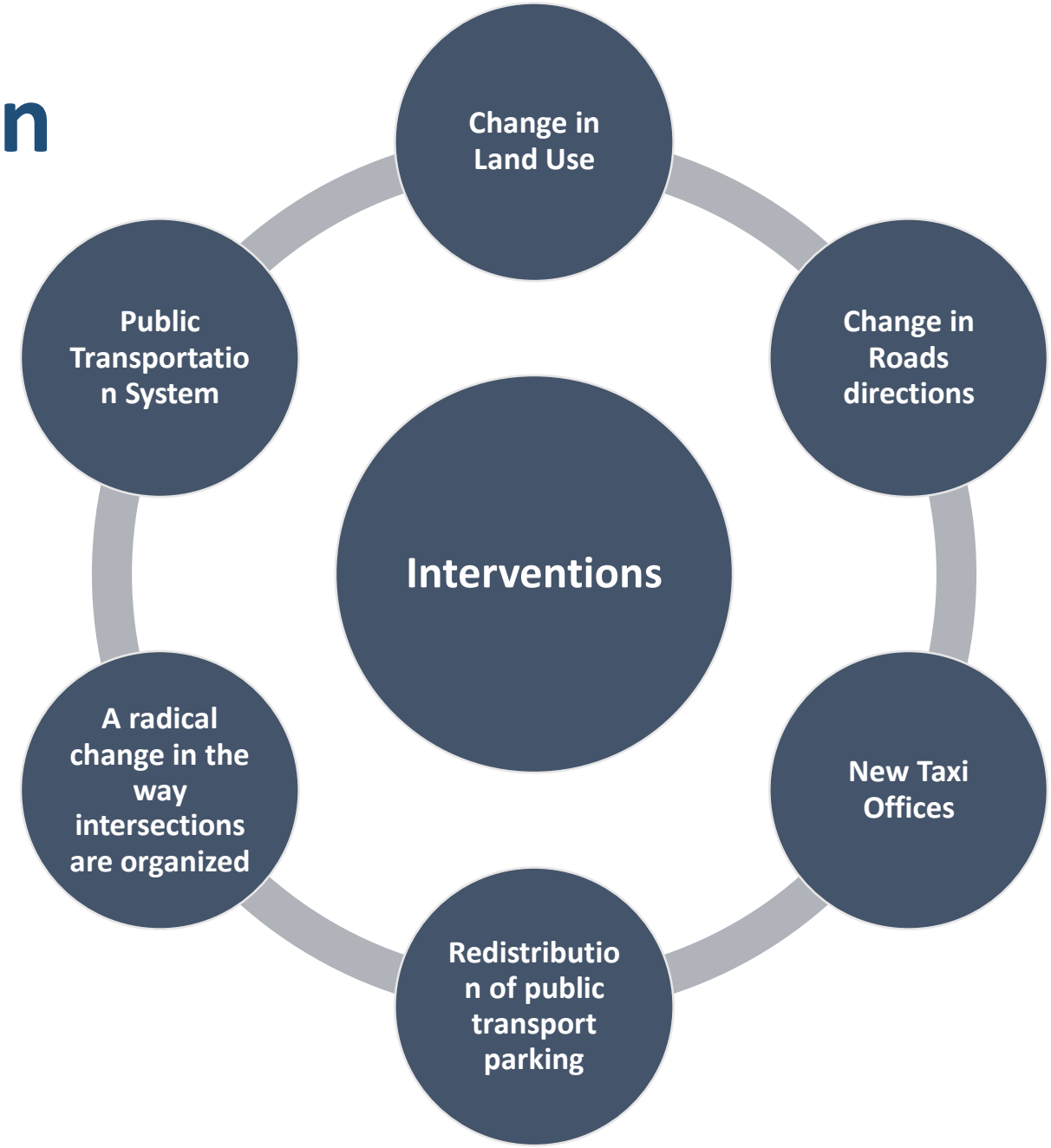
Plan Preparation and Detailed Planning

Transportation System

	Route 1	Route 2	Route 3
Length	9 Km	4 Km	5 Km
Speed	40 Km/h	40 Km/h	40 Km/h
Trip Length	45 Min	20 Min	25 Min



Conclusion


Interventions
Change in Land Use
Change in Roads directions
New Taxi Offices
Redistributio n of public transport parking
A radical change in the way intersections are organized
Public Transportatio n System

Thank you