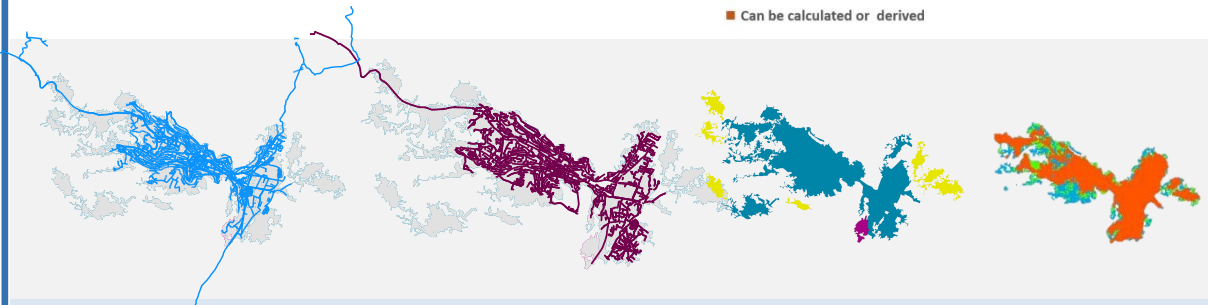
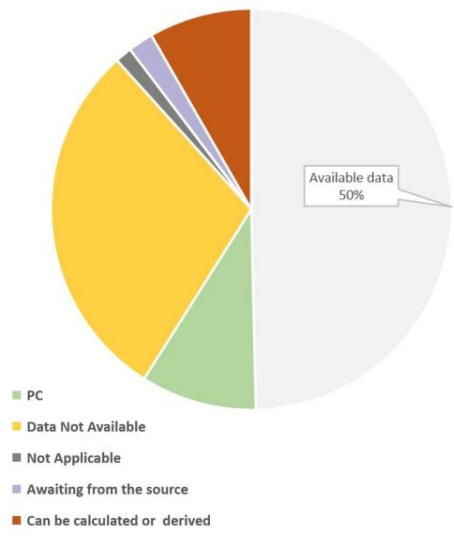


Integrated Cities and Development - ICUD

GIS & Urban Data Analysis - Summary Report

Indicator	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
...



2017 -2018

Introduction:

The Integrated Cities and Urban Development Project – ICUD, is a 4 years World Bank funded project jointly implemented by the Ministry of Local Government and the Municipal Development and Lending Fund. The project will work on strengthening the institutional and technical capacities of the participating urban areas to plan for sustainable urban growth through the provision of, inter alia, technical assistance (TA), goods, and training.

The project targets five key urban areas in the West Bank and Gaza selected for their strategic importance in terms of population and future economic growth. These include 29 LGUs (16 Municipalities and 14 Village Councils). These are:

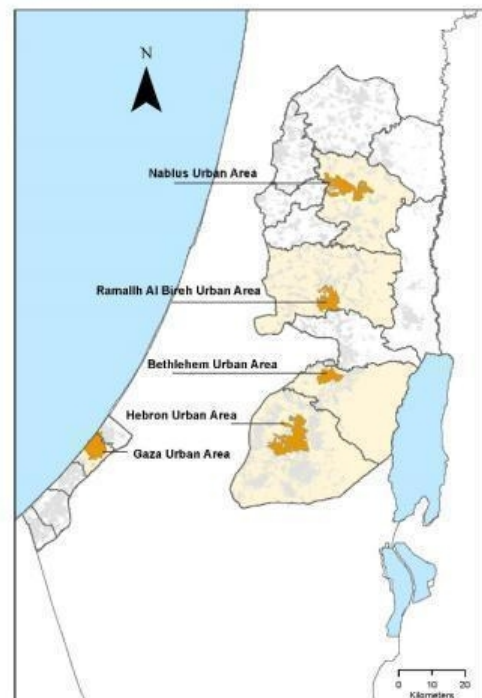
Nablus Urban Area: including the municipalities of Nablus & Sarra and the village councils of - Azmut, Deir-al-Hatab, Salim, Rujeib, Kafr Qalill, 'Iraq Burin, Tell, Beit Iba, Qusin, Zawata, Beit Wazan, and Deir Sharaf.

Ramallah al Bireh Urban Area: including the municipalities of Ramallah, Al-Bireh, Beituniya, and Surda-Abu Qash.

Bethlehem Urban Area: including the municipalities of Bethlehem, Beit Jala, Beit Sahur, Ad Doha, and Al Khader, and the village council of Ertas.

Hebron Urban Area: including the municipalities of Hebron, Taffuh, Dura, Halhul, and the village council of Beit Kahil VC.

Gaza Urban Area: consisting of Gaza City Municipality



Progress of Baseline Assessment of Existing Urban Extent

To achieve Milestone II “Complete Baseline Assessment of Existing Urban Extent” under Component 1: Planning for Sustainable Urban Growth, work has started on assessing and analyzing the urban data availability and their quality in the targeted urban areas, in addition to identifying data gaps and data needs necessary to inform the urban growth scenario analysis exercise and afterward, the creation of shared databases. An Urban Data Assessment Matrix was prepared to compile various information about the different data layers in the participating LGUs. The urban data includes:

1. Population +Density + Socioeconomic Data
2. Built UP Area Analysis/ Land Consumption Rate
3. Housing
4. Utilities

5. Transport and Mobility, and Walk ability
6. Infrastructure Networks
7. Environmental Analysis
8. Geopolitical Data
9. Cultural Heritage & TOURIST Data

The assessment included the level of data availability, type of data, current usage, sources, limitation to data collection, among others. Moreover, the analysis is also conducting a quick examination of what are the immediate data needs at the LGU level. In addition, discussions have taken place with GeoMoLG team at the Ministry of Local Government to ensure complementary data assessment work and to acquire initial data layers needed for the urban growth

After Data urban matrix was filled by LGUs and deep assessment was conducted. (Annex1). A summary Sheet was developed providing a brief background on the current urban data availability type of data and its current usage, sources, and limitation to data collection at participating LGUs, Analysis of the assessment were presented during the workshop to show the methodology, gaps, possible sources, challenges and recommendations, and challenges faced during data collection process.

A summary sheet of the urban data assessment results.

Followed up the urban data assessment, the data collection was started from each LGU as well as data collection from secondary sources, such as PCBS, OCHA, Northern & Southern Electricity Distribution Companies, Jerusalem District Electricity Company, Jerusalem Water Undertaking, Water Supply & Sewerage Authority (WSSA), Palestinian Water Authority (PWA), Joint Service Council of Solid Waste Management etc. Also Basic layers have been obtained from GeoMoLG, in addition to the geopolitical data which obtained from OCHA. These data layers are the base maps that needed for the urban growth exercise and for other project mapping and analysis.

In Parallel, several meetings were held with PCBS in order to and discuss and obtain data needed on the level of City Quarter according to the 2017 Census results (The official Preliminary Results of Housing and Establishments was released 1 March 2017). Moreover, different site visits to different GIS departments at Participated LGUs were conducted to fill the gaps of the unavailable data of the data needed to implement urban growth scenario

The following is a summary of the key analysis results for each of the urban areas:

Nablus Urban Area

Within the Nablus urban area, there is an incompatibility in the data availability and the use of GIS System between the city and the Participated LGUs, it was found out that none of the Participated LGUs manage their data using GIS system except Nablus Municipality. Although that GIS is used by various departments; central database or a GIS Department is not available at the municipality. Similar to other urban areas, the source of the population DATA is PCBS. Historical ortho Photos and master plans are available except for Salim and Kufr Qalil. Furthermore data is not available for housing, environment and socio economic aspects. Information on infrastructure Utilities are available at Nablus municipality and Northern Electricity Distribution Company (NEDCO). Cultural Heritage Plan is available for the old city of Nablus.

Ramallah Urban Area

Within Ramallah Urban Areas, Ramallah and Al Bireh have advanced information Systems, while Beituniya, and Surda Abu Qash have limited use of GIS system. Similar to all urban areas, population information is based on the 2007 Palestinian census, Projected for the years 2007-2016. Population data is available on the LGU level except for Ramallah and Al Bireh which is partially available on the census block level. Historical Ariel Photos and master plans are available. Currently, there is an on-going traffic study plan covering the urban area. Data is not available for housing, Environment, and socio economic aspects. Information on infrastructure Utilities and networks will be obtained from Jerusalem Water Undertaking and Jerusalem District Electricity company (JEDCO). Cultural Heritage Plans are only available for the old cities of Ramallah and AL Bireh.

Bethlehem Urban Area

In the Bethlehem urban area in terms of the capacity of GIS, it was found out that the four municipalities have GIS system. Though, the information lacks updating and there is no use of the GIS system in Doha, Khadr and Artas (there is a gap in the data availability). As the rest of the urban Areas depend on PCBS for population data. Historical Ariel Photos and master plans are available for all LGUs. Currently, there is an ongoing Mobility and transport study in Bethlehem area. Moreover ARIJ, the Applied Research Institute Jerusalem is a key source of data in the areas in terms of water, environment and Geopolitics. Data is not available for housing, or socio economic aspects.. Information on infrastructure Utilities and networks will be obtained from Water Supply & Sewerage Authority (WWSA) and Jerusalem District Electricity Company. Conservation Plan & Cultural Heritage Plans are available for the old cities of Bethlehem, Beit Jala and Beit Sahour from Cultural Heritage Preservation Centre in Bethlehem.

Hebron Urban Area

In the Hebron urban area in terms of the capacity of GIS, according to the feedback from the participated LGUs, the three municipalities have GIS systems but Dura Municipality used the system in an effective way. No GIS System used in Doha, Beit Kahel and Taffuh. PCBS is the main source of the population data for all LGUs and it is available only at the LGU level. Ariel photos and recent master plans are available for all LGUs except of Hebron. The master plan is old; only available a plan

for no. of neighbourhoods in the city. No Mobility and transport is available at Hebron area. Data is not available for housing, Environment, socio economic aspects and utilities. Information about housing is available only in Hebron and Dura. The infrastructure networks data are available for Hebron, Halhul and Dura .Cultural Heritage Plan only available for the old city of Hebron.

Gaza Urban Area

Gaza City has a very developed GIS System, but some the available data layers are outdated. The same as West Bank Urban Areas, PCBS is the main source of the population data. High resolution aerial photo is available but again it is old since 2008. Currently No aerial image with accuracy less than 50 cm can obtained for Gaza. The Master plan is also old since 2008. No Mobility and transport Plan, nor Housing, socioeconomic, environment and infrastructure are available. No Cultural Heritage Plans is available for the old city of Gaza.

Main Data Sources:

1. GeoMoLG
2. Municipality databases
3. Spatial Development Framework (SDF)
4. Palestinian Central Bureau of Statistics (PCBS)
5. OCHA 2018
6. International Committee of the Red Cross (ICRC)
7. Northern & Southern Electricity Distribution Companies
8. Jerusalem District Electricity Company
9. Jerusalem Water Undertaking
10. Water Supply & Sewerage Authority (WSSA)
11. Palestinian Water Authority (PWA)
12. Ministry of Transportation
13. Joint Service Council of Solid Waste Management

Challenges:

- The availability of Urban Data at the level of LGUs is very limited, especially in the village councils, and all Urban Data at the street/neighborhood level is not available and Some of the available data is inaccurate or outdated .
- Fragmentation of the data (A large amount of spatial data in non-GIS digital format at the municipal level, need to merge, consolidate and integrate.
- Weak coordination/data sharing between the municipal departments or governmental organizations Some Data is in CAD format, convert data, reformat
- There are big gaps among the LGUs in the same urban area in terms of GIS availability and capacity, and in terms of data accuracy and quality. In addition to availability of GIS and IT staff among the LGUs.
- Delay in providing available data either from the LGUs or other sources.
- The concept and content of the joint spatial database for each urban area is still not clear and needs more discussions with the Steering and technical teams of the Urban areas.

Annex1: Urban Data Matrix

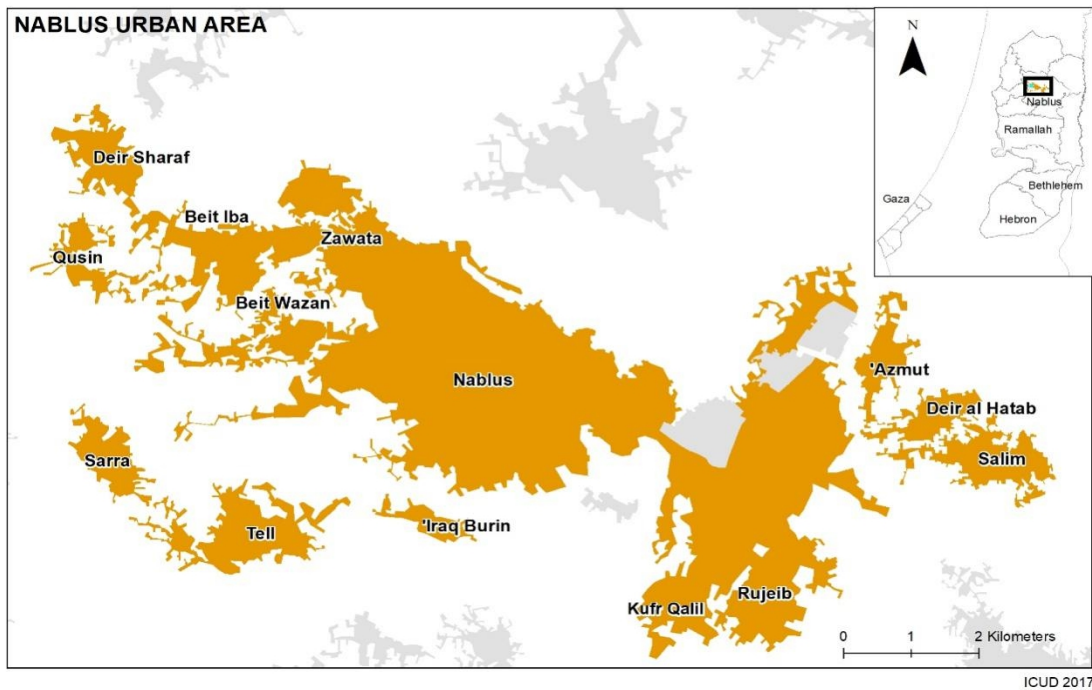
Annex (2): Urban Data & Analysis Profiles

NABLUS URBAN AREA

GENERAL DESCRIPTION

Nablus urban Area is located on the northern part of the West Bank of a population of 230,703 People (PCBS 2017). The Urban Area, defined by the cities continues built up extent covers the area of 33 sq km. The Urban Area includes Nablus City and 13 village councils of - Azmut, Deir-al-Hatab, Salim, Rujeib, Kafr Qalil, 'Iraq Burin, Tell, Sarra, Beit Iba, Qusin, Zawata, Beit Wazan, and Deir Shara

INTEGRATED CITIES AND URBAN DEVELOPMENT PROJECT (ICUD)



Key urban Information

NABLUS URBAN AREA	
Governorate Area (sq Km)	564
LGU Boundary Area	108
Built up Area 2016(sq Km)	33
Built up area by Gov	6%
Built-up 2016 per LGU	31%
Population 2007	189,418
Population 2016	230,703
Density (Built-up)	6991
Population Growth Rate	2.52

GIS Capacity

Evaluation of current GIS Capacity at LGUs

LGU	Software	Hardware	System	Database	Skills	GeoMOLG
Nablus	✓ (2 departments)	✓	✗	✗	✓	✓
Ázmut	✗	✗	✗	✗	✗	✗
Deir Al Hatab	✗	✗	✗	✗	✗	✗
Salim	✗	✗	✗	✗	✗	✗
Rujeib	✗	✗	✗	✗	✗	✗
Kafr Qalil	✗	✗	✗	✗	✗	✗
Iraq Burin	✗	✗	✗	✗	✗	✗
Tell	✗	✗	✗	✗	✗	✗
Sarra	✗	✗	✗	✗	✗	✗
Beit Iba	✗	✗	✗	✗	✗	✓
Qusin	✗	✗	✗	✗	✗	✗
Zawata	✗	✗	✗	✗	✗	✗
Beit Wazan	✗	✗	✗	✗	✗	✗
Deir Sharaf	✗	✗	✗	✗	✗	✗

Data Availability

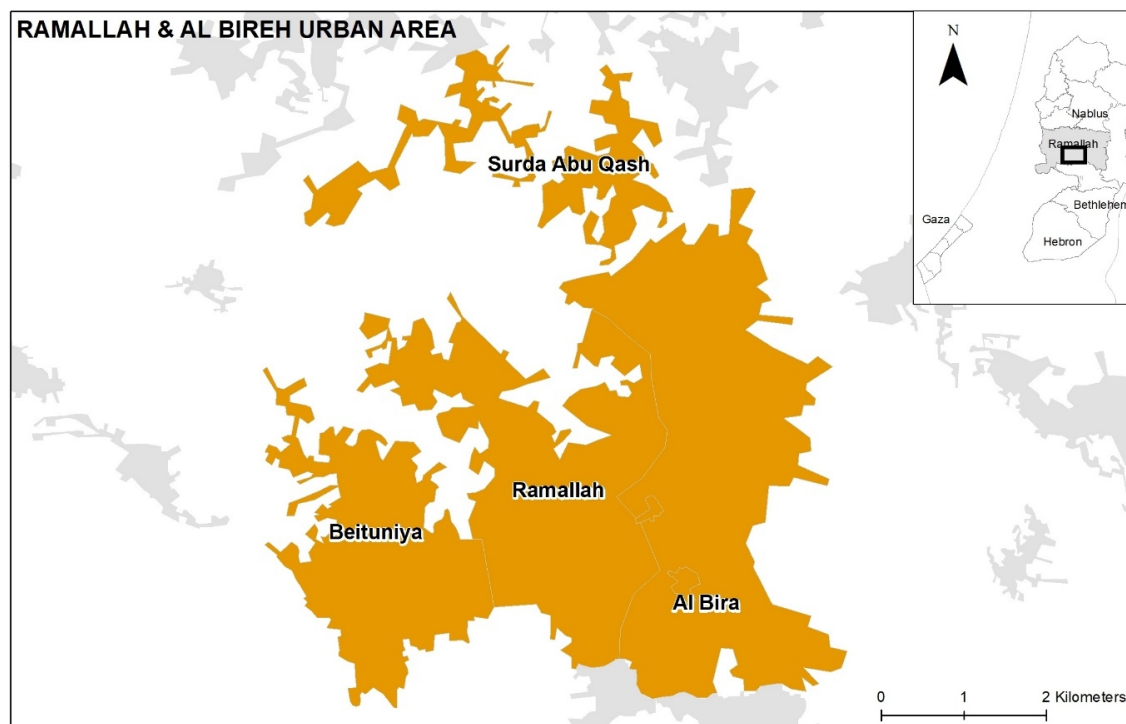
NABLUS URBAN AREA			
Type of Information	Sources of Data	Secondary sources	Notes
Population Data	PCBS	PCBS for data at Neighborhood or Census Block level	Data available at LGU Level
Ortho Photo	GeoMOLG 2016		Historical Photos needed
Master Plans	Available Except for Kufr Qalil		12 out of 14 LGUs have Master Plans, Salem MP is not authorized
Building heights	Not available		
Housing Units	Not available	PCBS	Land developers
Housing/Land values (m2)	Not Available		Municipality's Land Brokers + Land developers
Transportation & Mobility	<ul style="list-style-type: none"> Ministry of Transport National Transport Master Plan (NTMP) 	An Najah National University: Traffic Flow for main roads of Nablus City	<ul style="list-style-type: none"> MOT prepared the NTMP in 2015. (Public Transport, Buses, Rails, Airports)
Utilities (Consumption)	Available	Northern Distribution Electricity Company	Energy Consumption

Infrastructure Cost	Not available		Water and wastewater department can provide this according to proposed planning area
Infrastructure Networks	Available		
Environmental Analysis	Not Available		
Geopolitical data	GeoMOLG	OCHA	
Cultural Heritage	Available for the Old City of Nablus	Welfare Association	

RAMALLAH & AL BIREH URBAN AREA

GENERAL DESCRIPTION

Ramallah & Al Bireh urban Area is located on the Middle part of the West Bank of a population of 120,771 People (PCBS 2017). The Urban Area, defined by the cities continues built up extent covers the area of 25 sq km. The Urban Area includes Ramallah, Al Bireh, Beituniya and Surda abu Qash



ICUD 2017

Key urban Information

RAMALLAH & AL BIREH URBAN AREA	
Governorate Area (sq Km)	860
LGU Boundary Area	72
Built up Area 2016(sq Km)	25
Built up area by Gov	3%
Built-up 2016 per LGU	35%
Population 2007	92,918

Population 2017	120,771
Density (Built-up)	4831
Population Growth Rate	3.3

GIS Capacity

Evaluation of current GIS Capacity at LGUs

LGU	Software	Hardware	System	Database	Skills	GeoMO LG
Ramallah	✓	✓	✓	✓	✓	✓
Al Bireh	✓	✓	✓	✓	✓	✓
Beituniya	✓	✓	✗	✗	✗	✓
Surda Abu Qash	✓	✓	✗	✗	✗	✓

Data Availability

RAMALLAH & AL BIREH URBAN AREA			
Type of Information	Sources of Data	Secondary sources	Notes
Population Data	PCBS & Municipalities'	PCBS for data at Neighborhood or Census Block level + Municipalities	Population data of Ramallah & Al Bireh Cities are according to number of registered water meters
Ortho Photo	GeoMOLG 2016		Historical 1998,1995,2012,2014
Master Plans	Available		
Building heights	Not available		
Housing Units	Not available	PCBS	Land developers
Housing/Land values (m2)	Not Available		Municipality's Land Brokers + Land developers
Transportation & Mobility	<ul style="list-style-type: none"> SDF Mobility Study (Ramallah, AlBireh, Birtunia) Ministry of Transport National Transport Master Plan (NTMP) 		<ul style="list-style-type: none"> MOT prepared the NTMP in 2015. (Public Transport, Buses, Rails, Airports) The Mobility Study in 2016 studied and modelled OD survey and public transportation.

Utilities (Consumption)	Available	Jerusalem water Undertaking +Jerusalem District Electricity	Partial
Infrastructure Cost	Not available		
Infrastructure Networks	Available	Jerusalem water Undertaking +Jerusalem District Electricity	
Environmental Analysis	Not Available		
Geopolitical data	GeoMOLG	OCHA	
Cultural Heritage	Available for the Old City of Ramallah, Al Bireh		

BETHLEHEM URBAN AREA

GENERAL DESCRIPTION

Bethlehem urban Area is located on the Southern part of the West Bank of a population of 98,965 People (PCBS 2017). The Urban Area, defined by the cities continues built up extent covers the area of 19 sq km. The Urban Area includes Bethlehem, Beit Jala, Beit Sahur, Ad Doha Al Khader and Artas



ICUD 2017

Key urban Information

BETHLEHEM URBAN AREA	
Governorate Area (sq Km)	636
LGU Boundary Area	55
Built up Area 2016(sq Km)	19
Built up area by Gov	3%
Built-up 2016 per LGU	35%
Population 2007	92,918
Population 2016*	98,965
Density (Built-up)	5208
Population Growth Rate	3.05

GIS Capacity

Evaluation of current GIS Capacity at LGUs

LGU	Software	Hardware	System	Database	Skills	GeoMOLG
Bethlehem	✓	✓	✓	✓	✓	✓

Beit Jala	✓	✓	✗	✗	✓	✓
Beit Sahour	✓	✓	✗	✗	✓	✓
Ad Doha	✗	✗	✗	✗	✗	✓
Al Khader	✓	✓	✗	✗	✗	✓
Artas	✗	✗	✗	✗	✗	✗

Data Availability

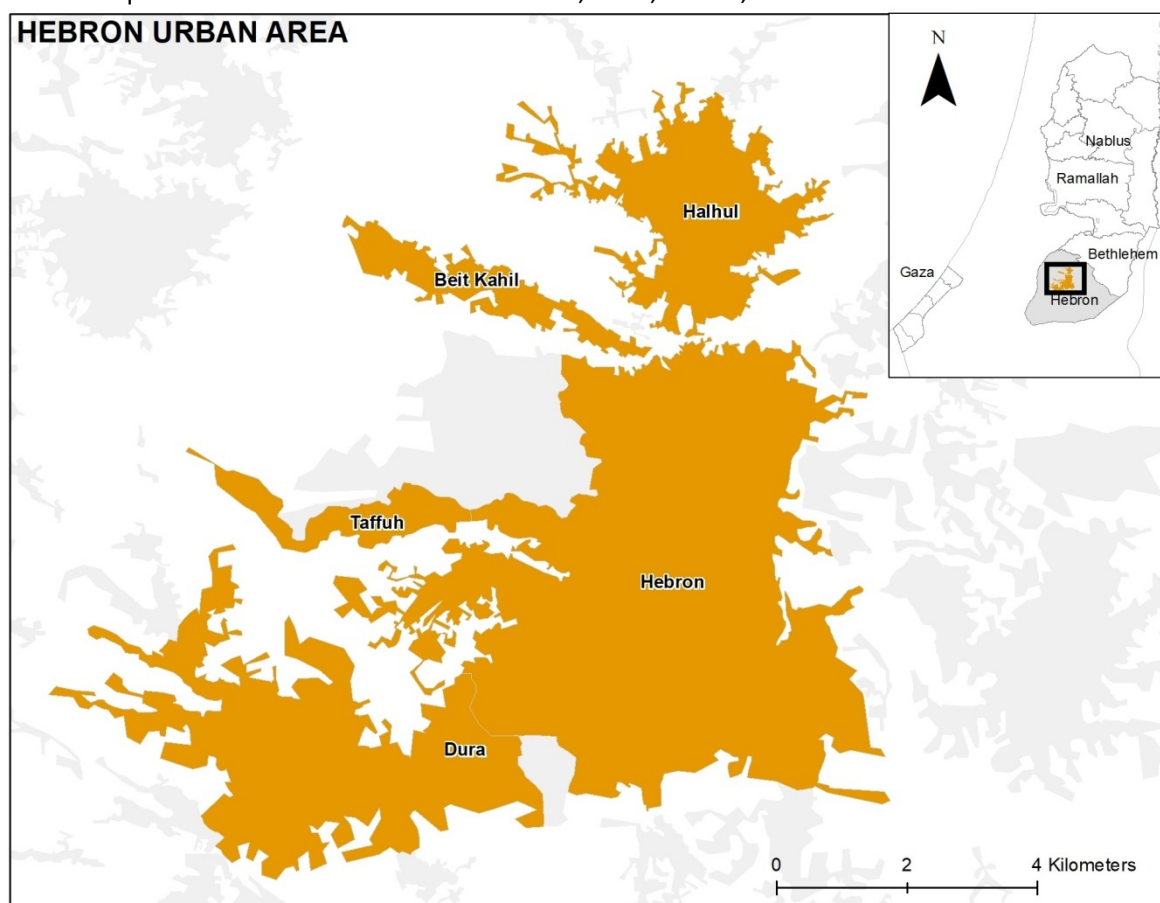
BETHELEHEM URBAN AREA			
Type of Information	Sources of Data	Secondary sources	Notes
Population Data	PCBS	PCBS for data at Neighborhood or Census Block level	
Ortho Photo	GeoMOLG 2016		Historical photos Available
Master Plans	Available		
Building heights	Not available		
Housing Units	Not available	PCBS	Land developers
Housing/Land values (m2)	Not Available		Municipality's Land Brokers + Land developers
Transportation & Mobility	<ul style="list-style-type: none"> Bethlehem Ongoing Mobility Study Ministry of Transport National Transport Master Plan (NTMP) 		<ul style="list-style-type: none"> MOT prepared the NTMP in 2015. (Public Transport, Buses, Rails, Airports) The Mobility Study finished phase 1 (Data Collection)
Utilities (Consumption)	Available	Water Supply and Sewerage Authority +Jerusalem District Electricity	
Infrastructure Cost	Not available		
Infrastructure Networks	Available	Water Supply and Sewerage Authority	
Environmental Analysis	Not Available		
Geopolitical data	GeoMOLG	OCHA/ARIJ	
Cultural Heritage	Available for the Old Cities	Center for	

		Cultural Heritage Perseveration CCHP	
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HEBRON URBAN AREA

GENERAL DESCRIPTION

Hebron urban Area is located on the Southern part of the West Bank of a population of 292,110 People (PCBS 2017). The Urban Area, defined by the cities continues built up extent covers the area of 56 sq km. The Urban Area includes Hebron, Dura, Halhul, Beit Khahil and Taffuh



Key urban Information

BETHLEHEM URBAN AREA	
Governorate Area (sq Km)	1008
LGU Boundary Area	163
Built up Area 2016(sq Km)	56
Built up area by Gov	6%
Built-up 2016 per LGU	34%
Population 2017	292,110
Density (Built-up)	5216
Population Growth Rate	3.79

GIS Capacity

Evaluation of current GIS Capacity at LGUs

LGU	Software	Hardware	System	Database	Skills	GeoMOLG
Hebron	✓	✓	✗	✓	✓	✓
Dura	✓	✓	✓	✓	✓	✓
Halhoul	✓	✓	✗	✗	✓	✓
Beit Khahil	✗	✗	✗	✗	✗	✓
Taffouh	✗	✗	✗	✗	✗	✗

Data Availability

HEBRON URBAN AREA			
Type of Information	Sources of Data	Secondary sources	Notes
Population Data	PCBS	PCBS for data at Neighborhood or Census Block level	
Ortho Photo	GeoMOLG 2016		2014,2015
Master Plans	Partial		3 out of 5 LGUs have master plans, Hebron and Halhul master plans are not authorized
Building heights	Not Available		
Housing Units	Not available	PCBS	Land developers
Housing/Land values (m2)	Not Available		Municipality's Land Brokers + Land developers
Transportation & Mobility	<ul style="list-style-type: none"> Ministry of Transport National Transport Master Plan (NTMP) 		<ul style="list-style-type: none"> MOT prepared the NTMP in 2015. (Public Transport, Buses, Rails, Airports)
Utilities (Consumption)	Available		Partial
Infrastructure Cost	Not available	Southern Electricity Company	
Infrastructure Networks	Available	Southern Electricity Company	
Environmental Analysis	Not Available	Joint Service Council For Solid	

		Waste Management- South West Bank	
Geopolitical data	GeoMOLG	OCHA/ARIJ	
Cultural Heritage	Available for the Old City of Hebron		

GAZA URBAN AREA

GENERAL DESCRIPTION

Gaza urban Area is located on the eastern coast of the Mediterranean Sea. The total population of Gaza City is 631,215 (PCBS 2017). The built up extent covers the area of 21 sq km.



Key urban Information

GAZA URBAN AREA	
Governorate Area (sq Km)	73
LGU Boundary Area	56
Built up Area 2016(sq Km)	32
Built up area by Gov	44%
Population 2007	443,095
Population 2017	631,215

Density (Built-up)	18246
Population Growth Rate	3.53

GIS Capacity

Evaluation of current GIS Capacity at LGUs

LGU	Software	Hardware	System	Database	Skills	GeoMOLG
Gaza	✓	✓	✓	✓	✓	✓

Data Availability

GAZA URBAN AREA			
Type of Information	Sources of Data	Secondary sources	Notes
Population Data	PCBS	PCBS for data at Neighborhood	
Ortho Photo	ICRC 2016		Historical ortho map 2008 (with 12.5 cm /pixel)
Master Plans	Available		
Building heights	Not available		
Housing Units	Not available	PCBS	Land developers
Housing/Land values (m2)	Not Available		
Transportation & Mobility	Available		
Utilities (Consumption)	Partially Available		Partial
Infrastructure Cost	Not available		
Infrastructure Networks	Available	Jerusalem water Undertaking +Jerusalem District Electricity	
Environmental Analysis	Not Available		
Geopolitical data	OCHA	OCHA	
Cultural Heritage	Boundary of the old city Only		