

GAM State on Climate Change Action

Goals, Status, Challenges facing Climate Change



Presentation Structure

Wednesday, March 9, 2022

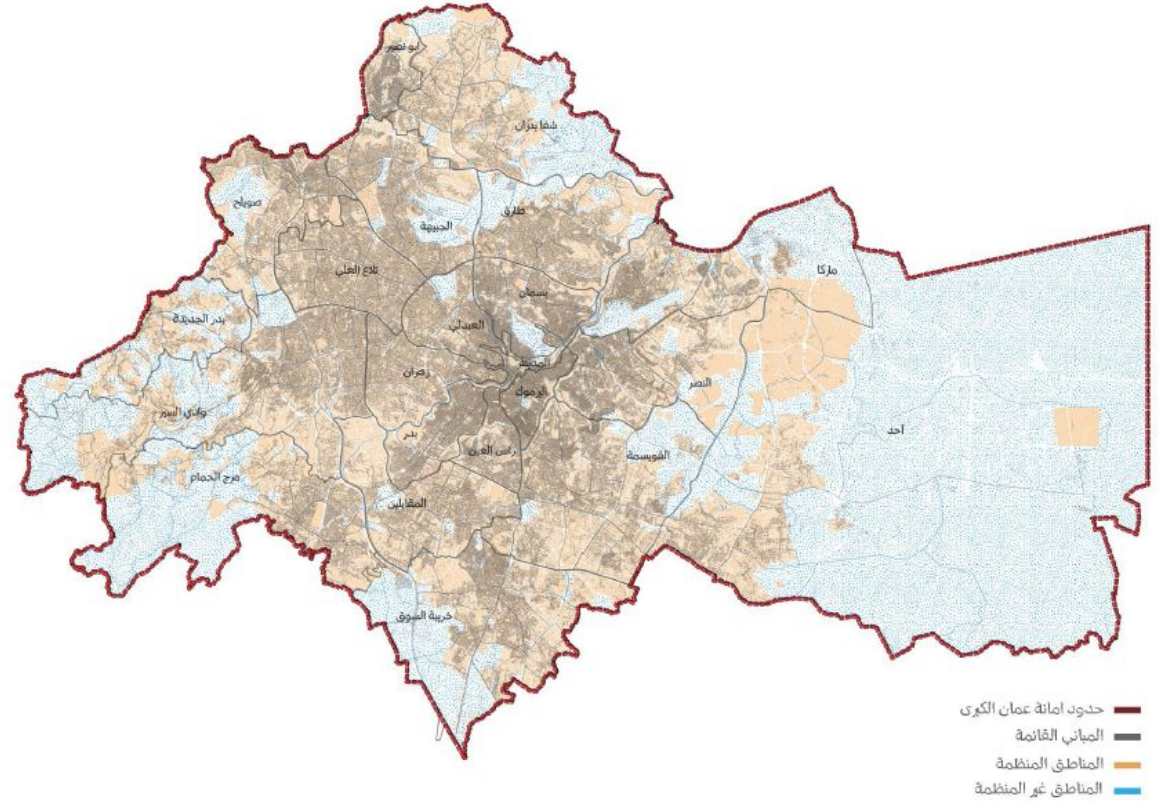
	Topic
01	Recap on Amman & Climate Change
02	Greater Amman Municipality & Climate Change
03	The Development of the Amman Climate Action Plan
04	Climate Action Plan Vision
05	Sectoral Targets
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01

Recap on Amman & Climate Change



Like other cities around the globe, Amman is already experiencing the impacts of a changing climate. The country is facing irregular patterns of rainfall swinging between the **extremes of drought** to excessive rain over a short period of time causing **flash floods** in low areas, rising temperatures in summer causing **heat waves** and declining temperatures in winter causing debilitating **blizzards**. Climate hazards directly impact the health of the population and operation of businesses and they disproportionately affect the most affected communities in Amman.



Districts of Greater Amman Municipality



Districts of Greater Amman Municipality

Total Number of Districts is 22



Neighbourhoods of Greater Amman Municipality

Total Number of Neighbourhoods is 192



Existing Buildings

Total Number of Buildings from Satellite is 228,413



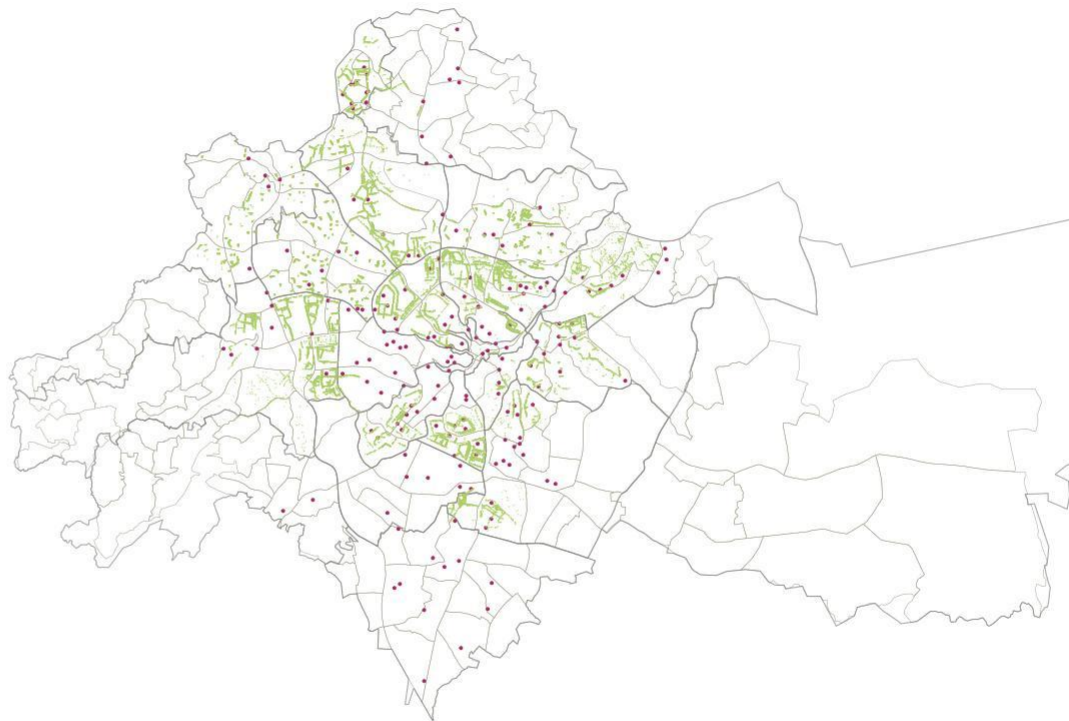
Existing Parks

Total Number of Parks is 190



Green Profiling Progress

Profiling is still in progress



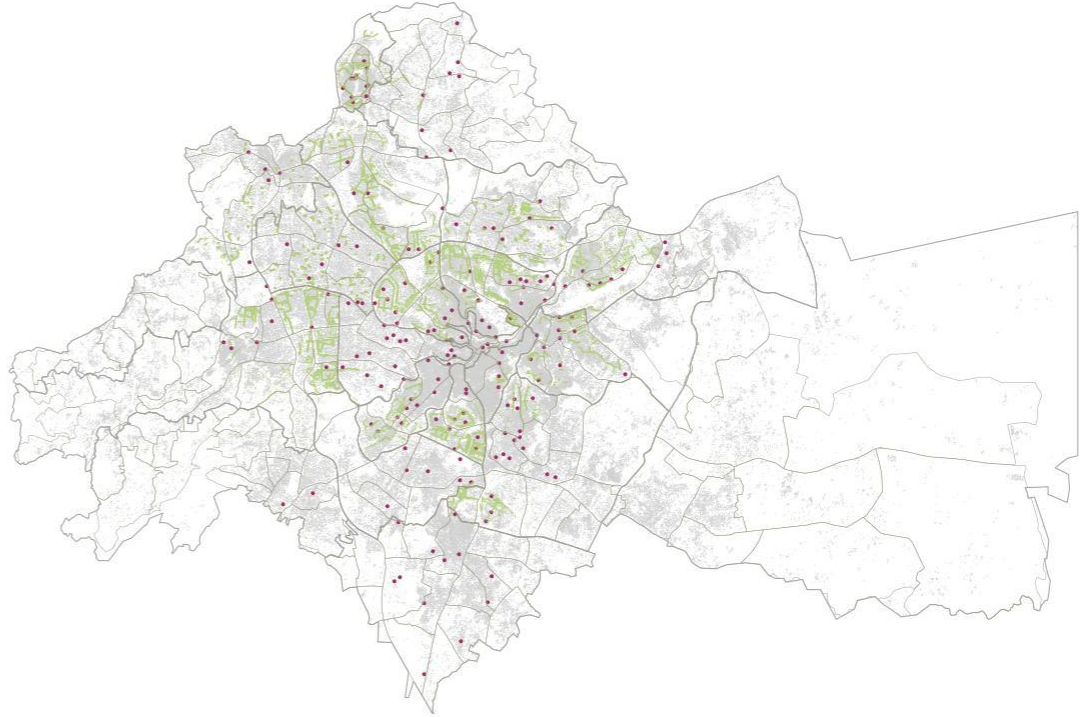
Current Status of Greening

Green Cover per person is 2.2-3.18 SQM

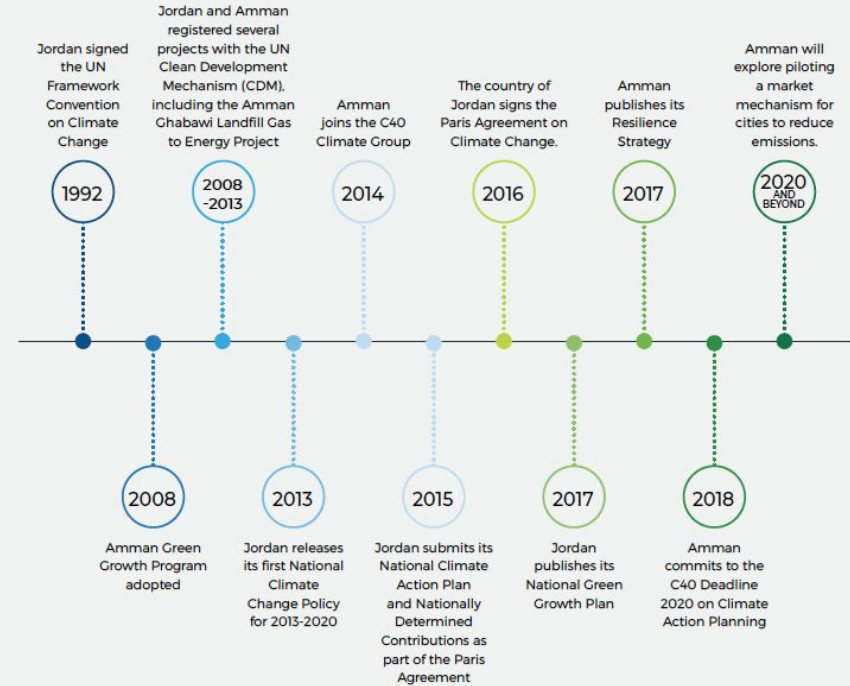
Green Cover Area is 12.7 SQ KM

Number of Trees Planted yearly is 36,000

Current Population 4.2 Million in Amman



The Hashemite Kingdom of Jordan and the city of Amman have long been committed to action on climate change. Amman's contribution to global climate change is minor. However, as a rapidly developing city in a strategically important region, it aspires to be a leader in showcasing the opportunities that low-carbon, resilient development provides to its inhabitants.

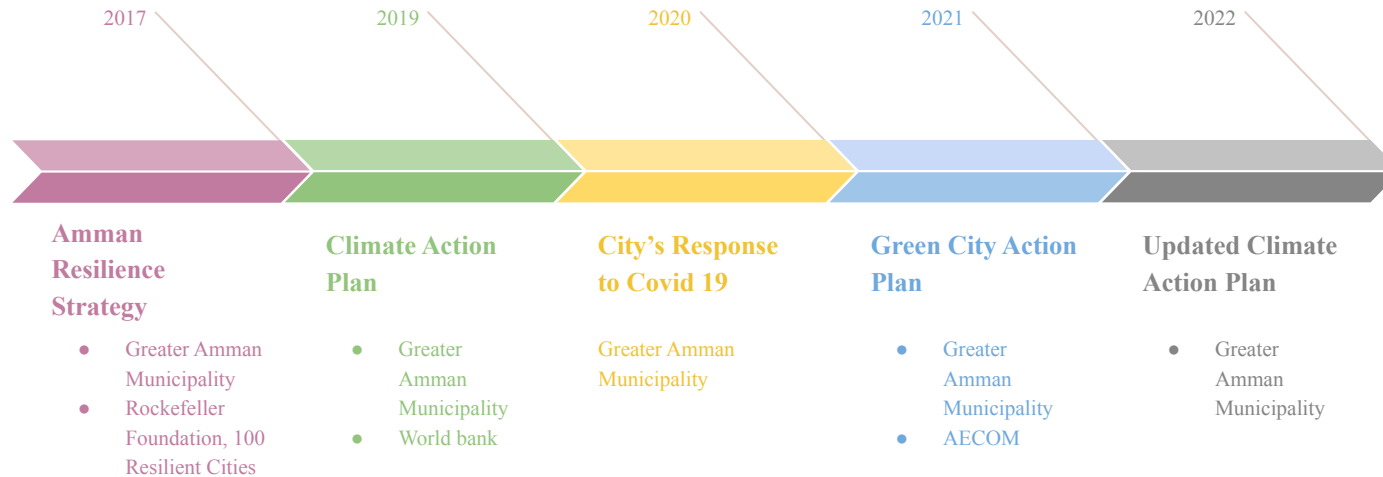




02
Greater Amman
Municipality &
Climate Change



Climate in Strategies or Action Plans





Climate-related challenges

Unusually heavy rains often lead to flooding in lower-lying areas of the city, and its elevation exposes it to hazardous blizzards. Recent snowstorms have paralyzed the city, affecting schools, transportation and the power grid. The city has responded to these disruptions by establishing protocols for emergency operations, including rapid-response communications centers and elaborate community coordination processes.

Recent influx of migrants

has put pressure on the city's infrastructure and its ability to deliver basic services, this includes our waste management and transport systems. While the city has well-managed road, tunnel, and bridge infrastructure, there is little in the way of reliable public transport infrastructure, forcing residents to rely heavily on cars.



Lack of natural resources

including energy and water, also render the city heavily reliant on imports from the wider region. This leaves the city exposed to price volatility and insecurity of supply. Compounded by increasing demand from a growing population, Amman must find ways to meet its future resource needs without compromising its ability to deliver reliable and high quality services.

Economic challenges

Regional instability and a difficult business and investment environment that discourages foreign investments have also contributed to economic stagnation and a growing threat to the continuity of the city's services and systems.





2 An Environmentally proactive City

We will...

- A. Manage and fulfil climate change commitments
- B. Improve energy efficiency and energy security, including by diversifying energy sources
- C. Promote application of green building codes and guidelines
- D. Manage our water resources efficiently
- E. Improve our waste management system

Action 2.A.1

Create a team responsible for our climate change portfolio

This team will coordinate the city's actions in relation to mitigating climate change. Activities include recruiting staff with appropriate skills, modifying internal policies, coordinating with relevant stakeholders, establishing a database of the city's ongoing actions, and monitoring progress to ensure the city meets its GHG emissions reduction obligations.

Owner
GAM (Amman Resilience Office)

Status
Ongoing

Timescale
Short

Partners
• Ministry of Environment
• C40



Resilience Value

- Elevate the city's climate change challenges.
- Integrate city wide climate actions.
- Increase knowledge sharing and networking between cities facing similar challenges.
- Create employment opportunities.
- Support the delivery of environmental policies and activities.

Action 2.A.2

Develop a Climate Change Action Plan

Establish an integrated plan describing the actions the city will take to mitigate and adapt to climate change. The plan will address improving air quality, protecting natural resources and ecosystems, sustainable development, updating and enforcing environmental laws, and cooperation with other institutions (e.g. universities). It will also explain the support that will be needed from institutional actors, policy adjustments needed to leverage resources, and process for monitoring progress.

Owner
GAM (Mayor's Consultant)

Status
New

Timescale
Long term/phased

Partners
Ministry of Environment



Resilience Value

- Improve air quality and public health.
- Protect natural resources and ecosystems.
- Support integrated planning and strengthen environmental governance.
- Help to develop flexible emergency plans in the event of climate change related emergencies and incidents.

Action 2.A.3

Network and collaborate with international agencies on climate change

Engage with international agencies and networks to learn more about updating city standards and strategies, sharing information on climate adaptation and implementing the latest solutions and technologies.

Owner
GAM (Resilience Amman Office)

Status
Ongoing

Timescale
Short

Partners
100RC network



Resilience Value

- Facilitate networking and knowledge sharing.
- Support integrated planning and strengthen environmental governance.





Action 1.A.1

Develop an integrated mobility plan

Developing an integrated mobility plan is one of the city's top priorities aiming at addressing traffic congestion, the increase in private car use, lack of mass transport and safe pedestrian infrastructure. We will use demand management mechanisms and smart data to inform and operate the mobility plan. This will help us set up pilot projects in the medium term. As part of the sustainable transport strategy, a series of key performance indicators (KPIs) will be developed and used to measure its success. This will enable the plan to evolve and to be focused or reshaped as appropriate.

Smart applications including e-payments and real time communication and tracking systems will be introduced and provide fair opportunities and a competitive environment for all taxi operators. This will be supported by clear legislation that protects the rights of all parties. It will also encourage partnership between the public and private sectors.

Owner
GAM (Transport Directorate)

Status
Ongoing

Timescale
Medium

Partners

- Ministry of transport
- Land transport Regulatory Commission



Resilience Value

- Decrease traffic congestion, and provide a safe environment for pedestrians and drivers alike.
- Integrate land-use and transportation planning to deliver public transport infrastructure.
- Produce behavior change in citizens travel mode in favor of more walking and more public transport use.
- Contribute to the emissions reduction and improve the city's air quality.

Consider the mobility challenges and opportunities from residential neighborhoods in Amman (particularly the most marginalized and isolated among them) and critical places of employment (i.e. zones such as Sahab Industrial City, King Hussein Business Park, and Queen Alia International Airport free zone) or service provision centers.





Action 1.A.2

Plan and construct a comprehensive and efficient BRT system

We will deliver a premium quality, economically feasible, car-competitive mass transit system for use by all of Amman's citizens including car owners. Amman's BRT will be the city's first bus rapid transit system, in which high-capacity buses run in exclusive and segregated road lanes. Buses will run as frequently as every 3 minutes along Amman's busiest corridors. There will be 3 routes; from Sweileh in North West Amman to sport city intersection, and from sport city intersection to Jordan Museum in Ras-Al-Ain in east Amman, and from Al-Mahatta through Yarmouk street towards East South Amman limited to infrastructure enhancement along this route. The system will be expanded over time to cover all of Amman's neighborhoods. This action includes the development and design of BRT stops, stations, passenger information, vehicle specifications, interchanges and bus terminals. The BRT system currently under construction aims to increase the use of public transport from 13% to 20% by 2019.

Owner
GAM (Transport Directorate)

Status
Ongoing

Timescale
Long term/
phased

Partners
Ministry of transport



Resilience Value

- Provide a safe and modern public transport system to reduce reliance on the car, and encourage alternative modes of transport.
- Enhance accessibility for citizens to goods and services, in particular through the provision of a comprehensive and affordable public transport system.
- Reduce emissions from transport (cars) and improve air quality and public health.
- Contribute to Amman's aspirations of efficiency, inclusivity and sustainability.



Action 1.B.1

Develop, review and update Amman's 'Street Manual'

As transport infrastructure is evolving, and cities becoming multimodal, including pedestrians and cyclists, it is important to review and produce a streets manual that reflects urban settings. This, in design terms within cities, moves away from intercity geometric standards for network layouts. We will review and update our Street Manual to provide guidance for practitioners involved in the planning, design, provision and approval of new streets, including modifications to existing ones. This action aims to increase the quality of streets through good design, creating more people-oriented streets and providing a safe urban environment for all citizens including the most vulnerable.

Owner
GAM (Roads Dir.)

Status
Ongoing

Timescale
Short

Partners

- Ministry of Transport
- Land Transport Regulatory Commission
- Universities
- Ministry of Public Works
- Higher council for affairs of persons with disabilities



Resilience Value

- Provide guidance to city planners to design safe, high standard streets that provide universal and inclusive accessibility and promote a walkable environment.
- Encourage active and healthy lifestyles, and increase activities in public spaces.
- Support local businesses and boost economic activity.
- Provide an affordable mode of transport
- Encourage social interaction and cohesion amongst the communities.

Action 1.B.2

Create a walking map

We will start by identifying a number of possible routes in the city to create a network that connects our neighborhoods. We will integrate our existing assets such as Rainbow street, the old downtown, the Citadel, the Roman Theatre, art galleries and others with the identified network to create an inclusive walking map for the City aimed at all ages of the population and tourists alike. We will provide the required walking infrastructure based on our revised 'Street Manual'. We will create a walkability app and public campaigns to promote walking as an active mode of transport.

Owner
GAM (Engineering Directorate)

Status
New

Timescale
Long term/phased

Partners

- Ministry of Transport
- Ministry of Tourism
- NGO's



Resilience Value

- Connect our neighborhoods and communities.
- Promote active and healthy lifestyles for all ages.
- Reduce the use of private vehicles and CO₂ emissions.
- Enhance the city identity and support tourism.
- Increase in the footfall in the city will support local businesses and boost economic activity.



Action 1.B.3

Explore tactical urbanism opportunities

Tactical urbanism, a term that has become common and popular in 2010-2012, is used to describe temporary, pop-up, small-scale, low-cost place-making interventions to the built environment that improve the livability of our cities and inspire long-term change. Tactical urbanism interventions can be applied to streets, alleyways, parking spaces, and parking lots. Amman will work with the youth, communities and NGOs to temporarily reclaim space dedicated to vehicles to increase the vitality of our street life, create safe places for people to be active and social. We want to create meaningful temporary public realm spaces. We also aim to engage and learn from other 100RC cities who have implemented similar interventions. We want to empower citizens and make our streets lively again.

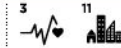
Owner
GAM (Engineering Directorate)

Status
New

Timescale
Medium

Partners

- Ministry of Tourism
- NGOs



Resilience Value

- Provide meeting and gathering spaces in the city.
- Promote neighborhood vitality and local economic development.
- Create opportunities for youth to be involved and participate in the redesign and reprogramming of spaces.
- Help temporarily reclaim spaces designated to cars
- Introduce more green spaces to urban environment.

Explore opportunities to use tactical urbanism to promote dialogue and interaction among diverse community groups, particularly among the youth. Events such as “pop-up football matches” or other similar events may work to promote social cohesion. Further, allowing diverse youth groups to explore opportunities for tactical urbanism themselves (for example, allowing youth groups to organize an activity within a municipally owned public space or activities to connect refugee youth with others in more established neighborhoods) may encourage positive creativity and serve as a way of promoting urban citizenship.



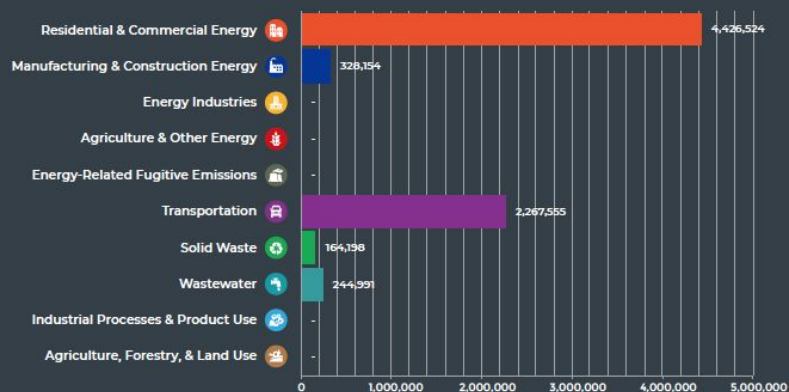
03
The Development of
the Amman Climate
Action Plan



Introduction

This Amman Climate Action Plan is an ambitious and **first step** on the long journey to creating a sustainable, vibrant future. It lays out an approach to creating a **carbon neutral Amman**, while **expanding services** and meeting the needs of the rapidly growing city. This inaugural plan sets an **interim target of a 40% reduction of greenhouse gas emissions by 2030**. Carbon neutrality is a long-term goal, this plan sets out a shared vision for collaboration among the government, private sector, development partners and residents of Amman. This strategy is **a living, evolving document** that the city will continue to build on until we achieve our plan for a **carbon-neutral 2050**.

HIGHEST EMITTING SECTORS BASED ON 2014 GHG INVENTORY

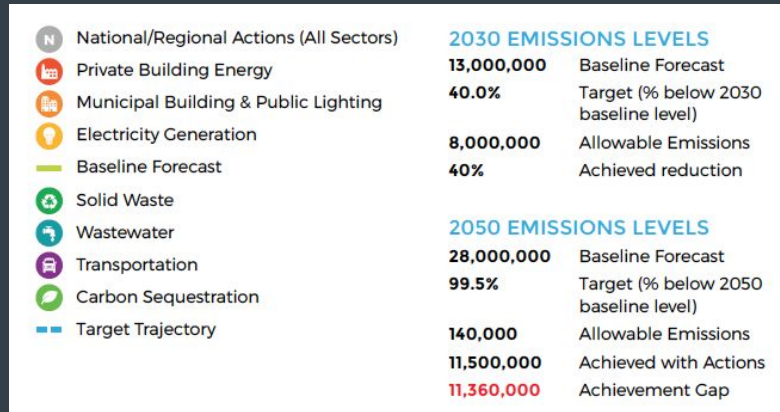


Amman completed its first city-wide inventory of greenhouse gas emissions for the year 2014 using the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories. A citywide GHG inventory enables cities to measure their overall emissions and understand what level of emissions different activities within the city contribute to the overall amount. This helps cities to better target actions that can reduce emissions.

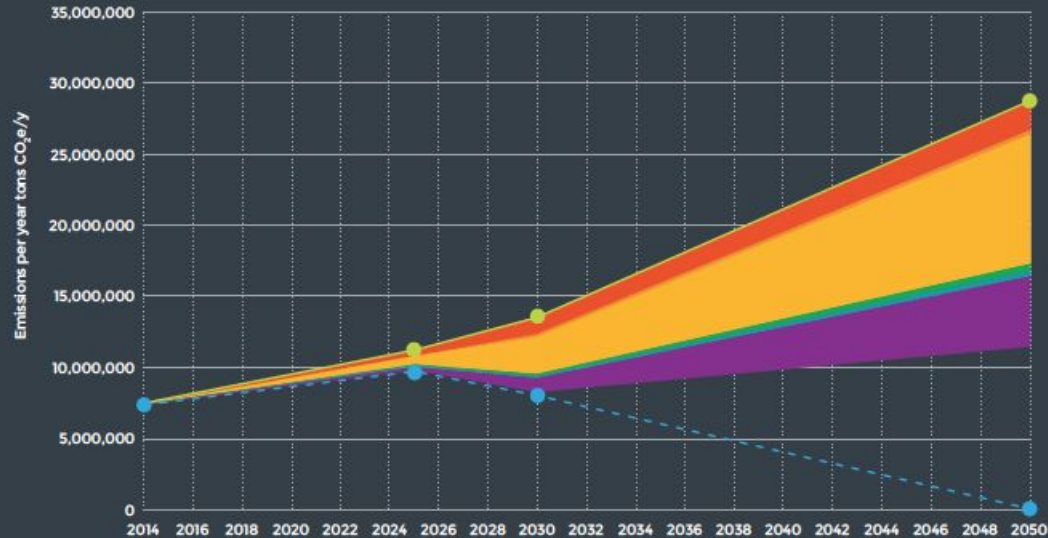


The inventory shows that the two sectors that contribute the most to emissions are stationary energy and transportation. According to the inventory, 64 percent of Amman's emissions came from the stationary energy source category (residential and commercial buildings), and 31 percent from transportation. More specifically, the largest sub-sectors of emissions were electricity in buildings, and on-road transport.





AMMAN EMISSIONS TRAJECTORY AND TARGET 2014-2050





THE AMMAN CLIMATE PLAN

A VISION FOR
2050 AMMAN

2019 GREATER AMMAN
MUNICIPALITY

2 An Environmentally proactive City

The Amman Climate Action Plan is an accompanying document to the Resilience Strategy. In the Resilience Strategy, the creation of a Climate Action Plan to mitigate emissions is cited as one action within the environmentally proactive city pillar. The actions within this Plan have been aligned closely with the Amman Resilience Strategy in the areas that overlap.

We will...

- A. Manage and fulfil climate change commitments**
- B. Improve energy efficiency and energy security, including by diversifying energy sources**
- C. Promote application of green building codes and guidelines**
- D. Manage our water resources efficiently**
- E. Improve our waste management system**

04
Climate Action Plan
Vision



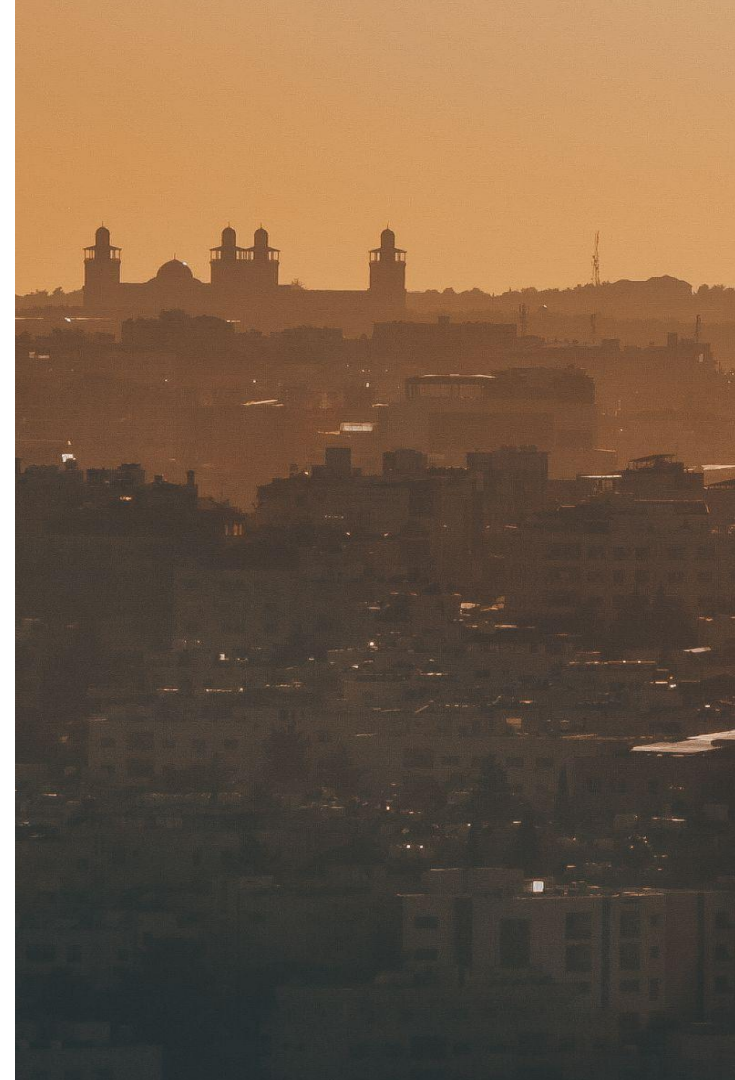
Vision

To transform the city of Amman to become a sustainable, green and livable city that works efficiently to preserve its resources for future generations.

05 Sectoral Targets



No new actions have been added between 2030 and 2050, only a dramatic scaling up of existing actions and an increase in penetration rates. New actions and technologies will be identified in the future that can close the gap by 2050, such as the actions that are listed in the Amman Green City Action Plan.





PILLARS FOR ACHIEVING 2050 VISION



Decarbonizing
electricity sources for
the city



Improving energy
efficiency in buildings



Enabling sustainable
transport mobility



Enhancing waste management
and reducing waste



Reducing water use and
improving efficiency



Improving integrated planning
for denser, transit-oriented
development and green
infrastructure and behavior
change towards increased
public transport use.



THE ELECTRICITY SOURCE for the city will need to be predominately carbon free in 2050.



NEWLY CONSTRUCTED BUILDINGS will all comply with green building guidelines, and a majority of existing buildings will be renovated to improve energy efficiency.



CITIZEN ENGAGEMENT - a cross-cutting program that includes launching a city-wide awareness program about climate change action and GAM's ongoing efforts.



RENEWABLE ENERGY WILL BE EXPANDED

- Building integrated solar photovoltaics (PVs) will provide residential and commercial buildings with the majority of their energy needs.
- The Greater Amman Municipality will produce its own renewable energy.



SUSTAINABLE MOBILITY

- Public transport will be clean, efficient and widespread.
- A majority of private vehicles and taxis will be electric powered.
- Walking will be a core mode of mobility in the city center.



WASTE

- Waste will be reduced, sorted, composted and recycled.
- Remaining solid waste will be processed in waste to energy sites.



WATER AND WASTE WATER

- Water will be efficiently used.
- Rainwater will be captured and reused.
- Waste water will be effectively treated, with a focus on capturing gases for energy use.



URBAN PLANNING AND LAND USE

- New development areas will be focused on public transit-oriented corridors
- Green spaces, parks and urban forestry will increase, and new building will be focused on underutilized land



ACTIONS FOR CROSS-SECTOR PLANNING

ACTIVITY	TIMEFRAME	VOLUME OF EMISSIONS REDUCED	SUSTAINABILITY BENEFITS
Examine housing policies to determine the factors driving the high vacant housing rate	● Medium	Unknown	Increased available housing, and decreased housing costs
Coordinate transit-oriented planning with the planning and transportation departments	● Short	Unknown	Maintained open spaces, reduced costs, and improved access to amenities
Explore zoning and other policies that can expand green open spaces and protect land from development	● Short	Unknown	Improved air quality and walkability
Plan for increased green spaces to enhance tree cover and increase the number of trees in Amman	● Medium	Unknown	Reduced heat island effect, improved walkability, and reduced local air pollution
Explore opportunities to incentivize urban agriculture in Amman, including zoning, financial incentives and other policies	● Short	Unknown	Provide source of food for low-income households and possible, source of income



ACTIONS TO INCREASE RENEWABLE ENERGY PRODUCTION

ACTIVITY	TIMEFRAME	EMISSION REDUCTION POTENTIAL (H,M,L)	SUSTAINABILITY BENEFITS
Develop solar power generation farm to power the GAM's municipal sites	● Medium	High	Improved air quality, and lower reliance on imported energy
Develop solar PV street lighting	● Short	Low	Reduce operating costs for the city
Outreach and awareness-building program to encourage installation of rooftop solar PV using existing national government financial incentives	● Short	Unknown	Reduce long-term energy costs for residents
Install rooftop solar units on GAM-owned municipal buildings, parking lots and pergolas	● Medium	Low,	Reduce operating costs for the city, provide leadership and an example for city residents
Explore renewable power purchase agreements for providing renewable energy for municipal use	● Medium	High	Support development of renewable energy



ACTIONS FOR IMPROVING SUSTAINABLE TRANSPORTATION

ACTIVITY	TIMEFRAME	VOLUME OF EMISSIONS REDUCED	SUSTAINABILITY BENEFITS
Plan and construct a Bus Rapid Transit system	● Medium /Phase 1 complete	High	Reduced commute times, improved productivity, and better air quality
Implement a public transportation awareness plan to change perceptions and behavior	● Short	Unknown	Awareness raising
Install electric vehicle charging stations around the city	● Short	Unknown	Improved infrastructure
Give preferred treatment for zero/low emission vehicles, including fast lanes, parking discounts, and reduced fees	● Medium	Unknown	Reduced costs
Replace GAM-owned fleet vehicles with electric vehicles	● Short	Low	Reduced operating costs for city
Replace 75 percent of taxis with electric taxis	● Short	Medium	Reduced local air pollution
Install bike paths and other bike safety measures	● Short	Unknown	Improved land use, and preserved open space
Promote walkability through installation of new sidewalks and maintenance; improve existing sidewalks; increase green space; and introduce pedestrian safety measures to enhance use	● Short	Unknown	Improved public health, and enhanced livability of the city
Enhance the efficiency of the city bus network using improved fuel specifications	● Short	Low	Reduced local air pollution, and improved public health



ACTIONS TO INCREASE ENERGY EFFICIENCY IN THE BUILDING SECTOR

ACTIVITY	TIMEFRAME*	VOLUME OF EMISSIONS REDUCED	SUSTAINABILITY BENEFITS
Improve energy efficiency in GAM-owned municipal buildings	● Medium	Low	Reduced costs for the municipality, and improved comfort of buildings
Implement green building strategies in public schools, universities, and religious institutions	● Medium	Medium	Reduced operational costs for schools and universities, and improved environment for learning
Implement green building strategies in public hospitals	● Medium	Medium	Reduced operational costs, and improved indoor environment
Improve enforcement of building codes	● Medium	Medium	Reduce costs for residents and improved living environment
Incentivize adoption of the Thermal Building Code and Retrofit Guidelines	● Medium	Medium	Reduced costs for residents and improved living environment
Increase participation in green building incentive program (Density bonus)	● Medium	Medium	Reduced costs for residents and improved living environment
Create a building energy rating and label program	● Short	Unknown	Improved perception of green building, incentivize efficient behavior, building awareness of benefits
Energy-efficient street lighting and lighting in parks	● Short	Low	Safer streets, and reduced costs for the city
Rebate program for energy efficient appliances	● Short	Medium	Reduced costs for residents
Solar water heater program incentive program	● Short	Low	Reduced costs for residents
Energy efficiency engagement plan for large energy users	● Medium	Medium	Reduced costs for residents
Existing buildings (residential): city-wide retrofit program	● Medium	High	Reduced costs for residents, and improved comfort and living environment

● Short - 10 years ● Medium - 10-15 years ● Long 15-30 years



ACTIONS FOR REDUCING WASTE AND IMPROVING WASTE MANAGEMENT

ACTIVITY	TIMEFRAME	VOLUME OF EMISSIONS REDUCED	SUSTAINABILITY BENEFITS
Develop and implement a waste management framework that sets targets for reducing waste, with zero waste as a vision.	● Short	Unknown	Awareness raising
Development of waste transfer sites in the northern and western parts of Amman	● Short	Medium	Reduced local air pollution, and lower operating costs
Implement waste sorting	● Short/ Pilot projects in progress	Medium	Reduced exposure to toxins from untreated waste, and an increase in job opportunities
Recyclable waste collection Recyclable / re-usable item drop-off sites	● Short	Medium	Reduced exposure to toxins from untreated waste, and an increase in job opportunities
Implement anaerobic digestion site for organic waste	● Long	High	Reduced exposure to toxins from untreated waste, increased job opportunities, and energy source provided to the city
Collect organic waste	● Medium	High	Reduced exposure to toxins from untreated waste, improved job opportunities, and energy source provided to the city
New fleet and equipment for solid waste operations	● Short	Medium	Reduced local air pollution, and lower operating costs for the city
Build a maintenance workshop for the existing waste fleet based at the Chabawi landfill to ensure that the fleet is running efficiently	● Short	Low	Reduced operating costs, and increased job opportunities
Complete design, building and operation of the Bio Gas system in Cell number 4 of the Al-Ghabawi landfill and connect it to the current operations	● Short	High	Reduced operating costs, reduced local air pollution, and increased provision of renewable energy



ACTIONS TO REDUCE WATER DEMAND AND IMPROVE WASTE WATER MANAGEMENT

ACTIVITY	TIMEFRAME	VOLUME OF EMISSIONS REDUCED	SUSTAINABILITY BENEFITS
Implement rainwater harvesting at GAM-owned municipal sites	Short-Medium	Low	Reduced water usage for landscaping, and slow runoff into the storm water system
Implement greywater recycling at GAM-owned municipal sites	Medium	Medium	Reduced water use
Install water efficient fixtures in GAM buildings	Short-Medium	Low	Reduced water use and costs
Create a storm water master plan for Amman	Short	Unknown	Reduced water use and costs
Develop areas of green infrastructure in the city to capture and slow storm water	Medium	Unknown	Reduced flooding and costs of managing storm water
Plant drought-tolerant plants in parks and public areas, and install efficient irrigation systems. Use recycled greywater or captured rain water in all municipal green sites to reduce groundwater uptake	Short	Low	Reduced water use and cost



ACTIONS FOR CROSS-SECTOR PLANNING

ACTIVITY	TIMEFRAME	VOLUME OF EMISSIONS REDUCED	SUSTAINABILITY BENEFITS
Examine housing policies to determine the factors driving the high vacant housing rate	● Medium	Unknown	Increased available housing, and decreased housing costs
Coordinate transit-oriented planning with the planning and transportation departments	● Short	Unknown	Maintained open spaces, reduced costs, and improved access to amenities
Enforce new policies that highlight natural heritage sites, green buildings, and public spaces	● Short	Unknown	Improved air quality and walkability
Plan for increased green spaces to enhance tree cover and increase the number of trees in Amman (by expansion of anti-desertification projects and green urban infrastructure also surrounding the city with a ring of trees to achieve protection from dust and wind)	● Medium	Unknown	Reduced heat island effect, improved walkability, and reduced local air pollution
Explore opportunities to incentivize urban agriculture in Amman, including zoning, financial incentives and other policies	● Short	Unknown	Provide source of food for low-income households and possible, source of income
Supporting local societies and communities that play an essential role in raising awareness and helping to empower women and men to adopt sustainable lifestyles.	● Short	Unknown	Improve knowledge of climate change, raise awareness
Implementing educational and recreational projects within the city that returns people back to nature and enhance their knowledge in these fields like botanical and theme gardens, eco parks, birds' gardens, butterflies gardens and zoos	● Short	Unknown	Improve knowledge of climate change, raise awareness

06
Post Covid-19 Updates





ملخص تقرير الأداء المؤسسي ومنعة مدينة عمان في مواجهة فيروس كورونا المستجد

في الفترة الممتدة بين آذار وأيار ٢٠٢٠

تم إعداد التقرير من خلال فريق عمل ملف كورونا
بإشراف معالي وزير التخطيط والتعاون الدولي
مبارك بن علي الشامسي، رئيس الفريق العامل
بمدينة عمان وعضوها إلى جانب أعضاء الفريق العامل

Density Challenges

Amman's city core has been densifying. Municipal area population density nearly doubled between 2000 and 2017 from 1,500 to 2,800 people per square kilometer.

Figure 6
POPULATION DENSITY, 2000

Maximum: 20,014 people/km²
Minimum: 2 people/km²
Average: 1,543 people/km²
Metro (using 2007–2013 boundary)
Maximum: 10,483 people/km²
Minimum: 3 people/km²
Average: 107 people/km²

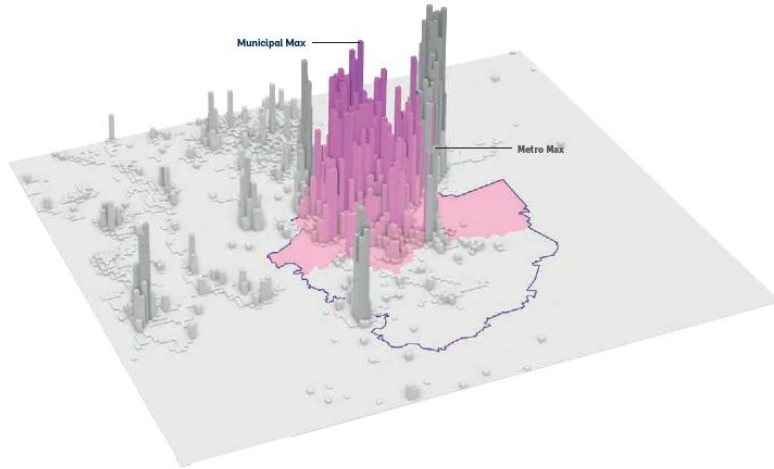


Figure 8
Overlay of density levels, 2000–2017

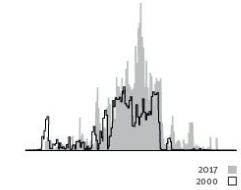
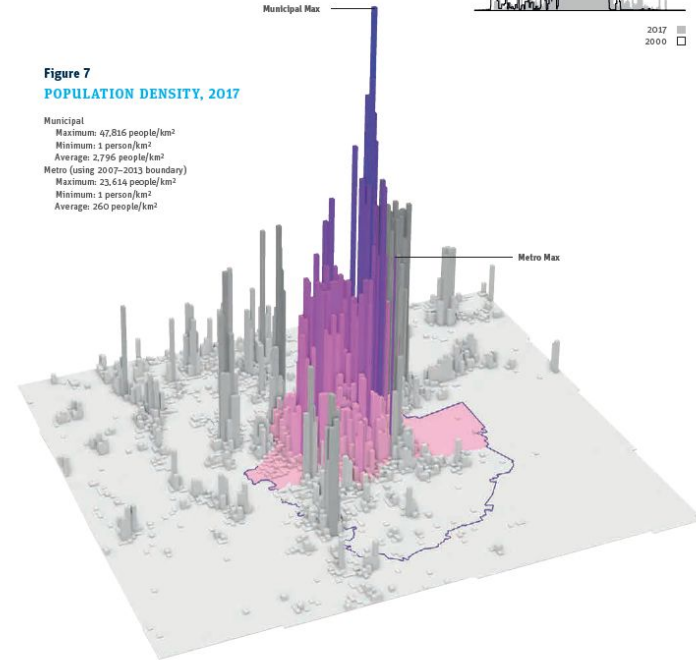
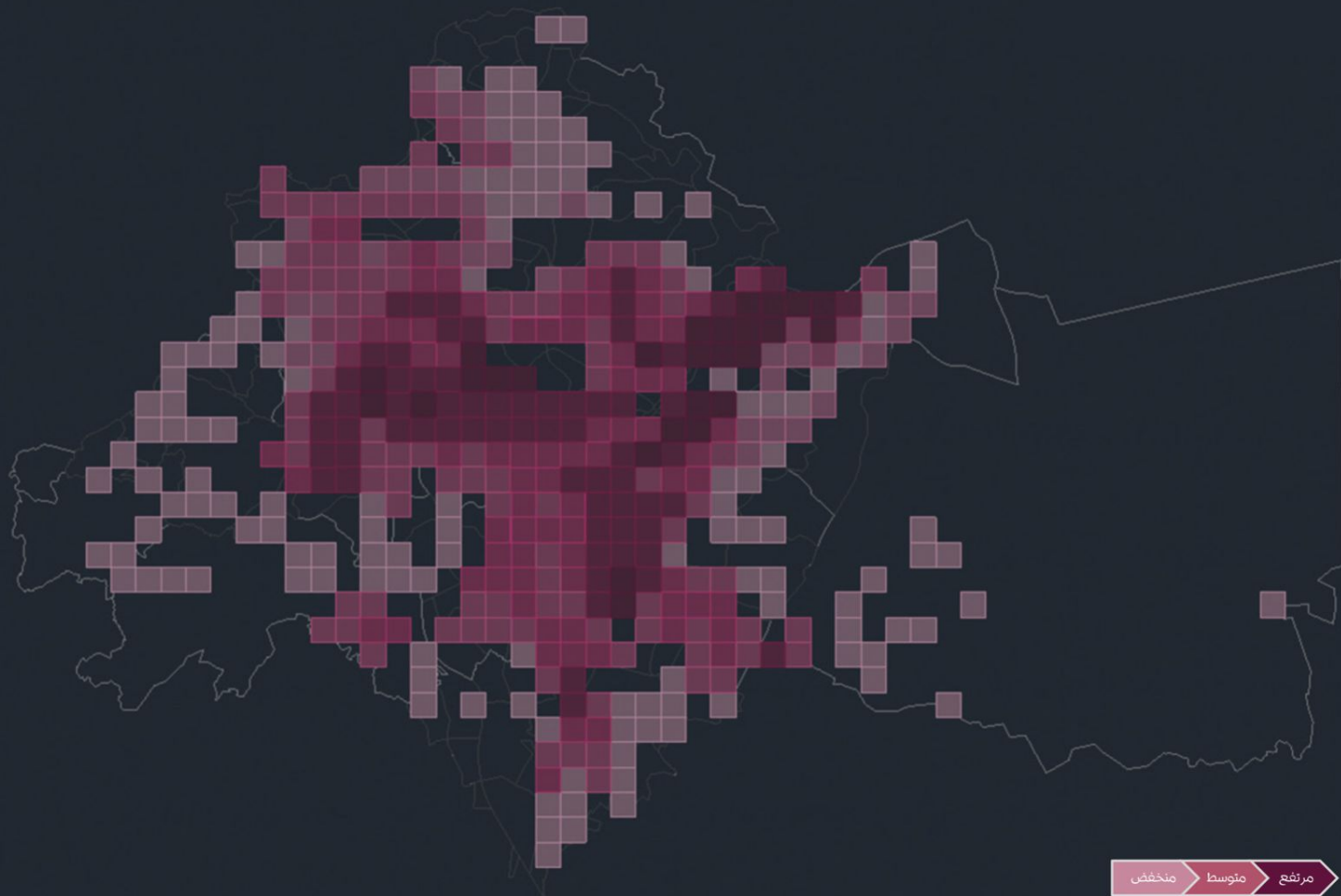


Figure 7
POPULATION DENSITY, 2017

Municipal
Maximum: 47,816 people/km²
Minimum: 1 person/km²
Average: 2,796 people/km²
Metro (using 2007–2013 boundary)
Maximum: 23,614 people/km²
Minimum: 1 person/km²
Average: 260 people/km²

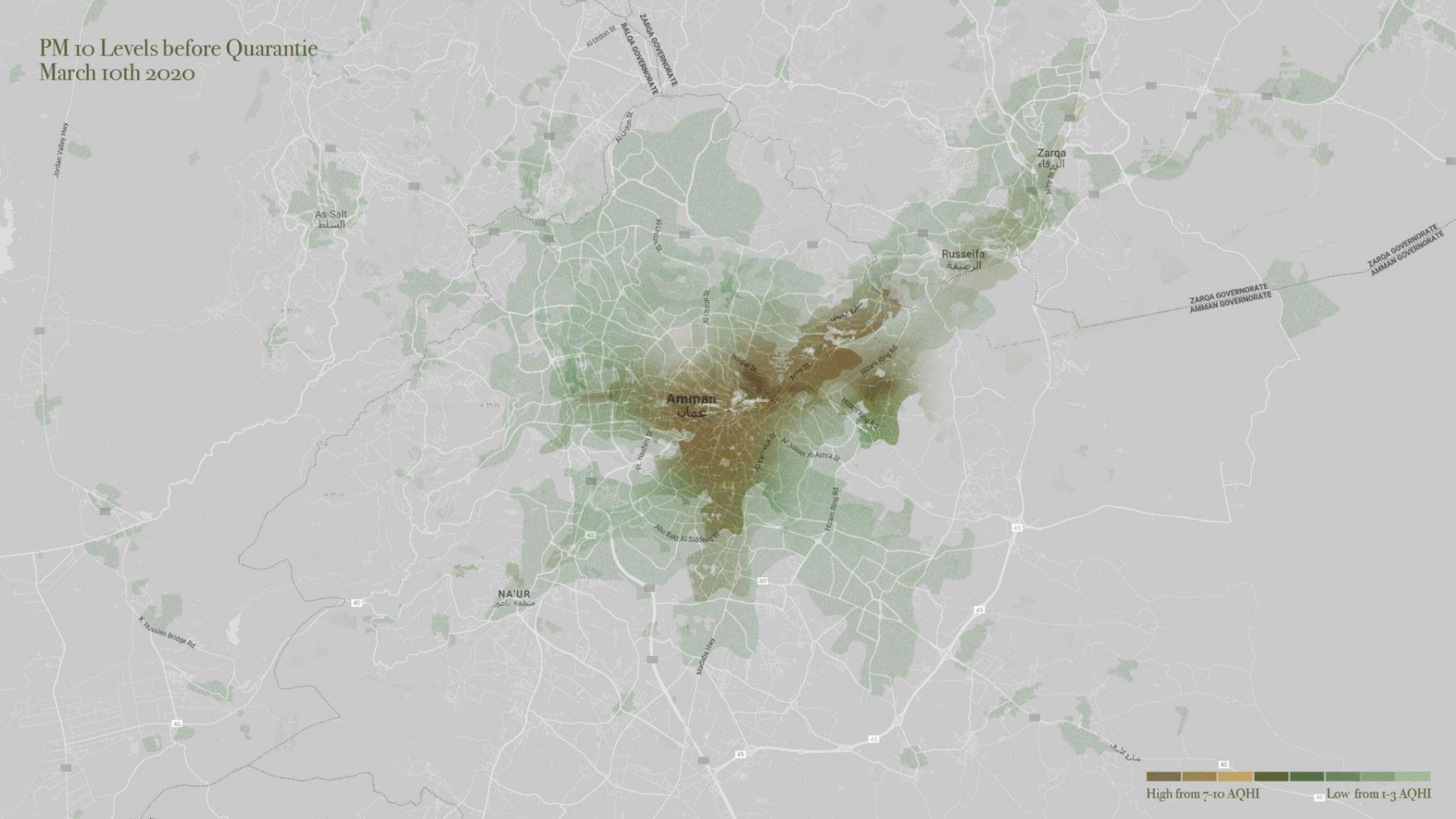




مرتفع متوسط منخفض



Jordan Valley Hwy





In an attempt to showcase the aftermath of quarantine on Air Quality in Amman, we gathered all the data about air pollution from **real-time dataset in the 6 stations** that are distributed in the city and we focused on PM10 distribution.

PM10 is part of the particulate matter family that is used to measure the level of air quality around the globe. In Amman we can measure this type but **we still in the process** to measure smaller ones like **PM 2.5**

07
Conclusions & Next
Steps



2030 OUTCOMES

The following is a list of the key actions and scale of implementation that would be needed to achieve Amman's target:

DECARBONIZATION OF AMMAN'S ELECTRICITY SOURCE

- Renewables = 30% or more

MUNICIPAL ACTIONS

- 100 MW of installed municipal solar PV
- 100% LED street lights

GREEN BUILDING PENETRATION

- 15-90% for existing and newly constructed buildings depending on income level

ROOF TOP SOLAR

- 20% penetration rate for residential buildings
- 25% penetration rate for commercial buildings

MODE SHARE SHIFT

- Private automobile reduction from 33 to 23% mode share
- BRT from zero to 9% of mode share, and public standard bus mode share stays roughly the same

ELECTRIFICATION OF VEHICLES

- 20% of private passenger vehicles are electric
- 20% of taxis are electric
- 100% of BRT buses are electric

WASTE TREATMENT IMPROVEMENTS

- 30% of food and yard waste is treated in anaerobic digester and 10% is composted
- Bio gas capture is achieved for 50% of anaerobic treatment of waste



KEY SHORT-TERM GOALS

- Improving energy efficiency in all GAM-controlled municipal buildings and public lighting to show leadership and demonstrate cost effectiveness.
- Improving enforcement of existing building codes.
- Incentivizing and encouraging best practice in passive design and green construction for commercial buildings.
- Partnering with the national government and international organizations to implement energy efficient programs for existing residential buildings.
- Incentivize and promote residential and commercial rooftop solar energy units
- Explore sites for municipal solar opportunities
- Research other clean, renewable source options

BUILDINGS

- Conduct a new transport survey and update the Transport and Mobility Master Plan (TMMP) alongside an integrated land use planning exercise.
- Improve pedestrian and bicycling experiences and safety.
- Incentivize electric vehicles and show leadership by electrifying the municipal bus fleet.
- Prioritize low carbon modes of transportation in infrastructure investments.

TRANSPORT

- Sort waste for composting and recycling
- Separate and divert waste, and implement recycling and composting programs
- Improve and establish additional waste infrastructure
- Encourage and incentivize rainwater harvesting for residential and commercial buildings
- Implement water saving measures and water recycling or rainwater harvesting in municipal buildings
- Develop green infrastructure to capture and treat storm water in public spaces.

WASTE MANAGEMENT

- Include the Plan goals in future urban and transport planning, including updates.
- Further develop transit-oriented development policies to concentrate infill along the BRT lines being built.
- Increase green open spaces by modifying existing regulations, enabling the GAM to zone and create more public open spaces in the city.
- Properly enforce existing regulations and zoning policies to implement GAM's vision of an increase in green areas.

URBAN PLANNING



08 Next Steps



Next Steps

01

Update the Climate Action Plan

- Migrate the inventory datasets from CURB to Pathways

02

Develop the Vulnerability Assessment Report

- Acquire financial or technical support to finish the report

03

Review all Actions related to Climate Change at GAM

- Develop a master database for all actions at GAM related to climate change

04

Update Actions

- Remove / Add actions after review

05

Integrate Climate Actions in GAM Sectors

- Add sectoral actions in GAM for implementation and monitoring

08. How You Can Help



Develop a Workplan for Updating the Existing Climate Action Plan with GAM team

Help GAM to finish the Climate Adaptation Requirements for CAP Update

Help GAM Develop a Healthy PPP to Invest in Climate Action

A satellite map of a region with a mix of urban, agricultural, and natural landscapes. The text "Thank You" is centered over the map.

Thank You