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ASSESSING SMART CITY INITIATIVES FOR THE MEDITERRANEAN REGION

FACING THE CHALLENGES OF A NEW ERA: SMART CITY PROJECTS

16th and 17th of July, 2014
La Granja, Segovia



European
Investment
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- Socioeconomic, Demographic & Urban Characteristics (Amman):

Inhabitants	2,473,400
City Extension	7,579 km²
Population Density	326.35 person per km²
GDP/ per capita income¹	3,096.2 JD per capita
Unemployment Rate	12.2% (10.4% Male, 19.9% Female) Average wage in the reference month (429 JD M, 379 JD F). Amman Unemployment rate is 10.3%
Expenditure in R&D	0.42% of the GDP

- Socioeconomic, Demographic & Urban Characteristics (Amman):

Main Economic Activities	<ul style="list-style-type: none">Public administration and defenseCompulsory social securityManufacturing, Wholesale and retail trade; repair of motor vehicles and motorcyclesEducationHuman health and social work activitiesTransportation and storageAccommodation and food service activitiesInformation and communication

- Socioeconomic, Demographic & Urban Characteristics (Amman):

% of people at risk of poverty or social exclusion ¹	10.8%
ICT baseline:	
Fixed lines (Land)	14.1%
Mobile Phones	98.2 %
PC or Laptop	57.5%
Internet	47.3%
Percentage of PC users age 5+ years	51.4%
Electricity	<ul style="list-style-type: none"> • Electricity Consumption Per Capita: 2659 (K.W.H) • Population Supplied with Electricity: 99.9% • Industrial Consumption of Electricity: 24.3% • Household Consumption of Electricity: 42.9%

- Socioeconomic, Demographic & Urban Characteristics (Amman):

Transport Indicators	<ul style="list-style-type: none">Percentage of small saloons to total vehicles: 73%No. of casualties per accident: 0.16 person.
Length of Road Networks	990 km (260 km Highways, 193 km Secondary Roads, 537 km Rural Roads)
No of Licensed vehicles	963211 (888758 private, 74453 public)

Main City Challenges



- Environment
- Planning
- Transport
- Water
- Energy
- Poverty
- Public Health Insurance

Main City Challenges

Indicators for evaluation	
Air Pollution Emissions ¹ : NO ₂	8.2 – 118.4 µg/m ³ 86% (below 60) 3% (100 – 118.4)
PM (10 microns)	67 µg/m ³
PM (2.5 microns)	40 µg/m ³
SO ₂	0.3 – 96.3 µg/m ³ 88% (0 - 20) 9% (21 – 40)
GHG Emissions: CO ₂	20.14 MT (Jordan contributed in year 2000)
Inequality ²	0.387 GINI Coefficient
Noise maps	N/A
Rubbish bins	2000 tons/day
Traffic Monitoring	96 Camera (still 44 to be installed)
Water leaks	32% losses in freshwater system

Smart City Project 1



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ASSESSING SMART CITY INITIATIVES
FOR THE MEDITERRANEAN REGION

Traffic Monitoring and Traffic Lights Programming

Objectives:

Solves traffic congestions,
good transportation,
crimes

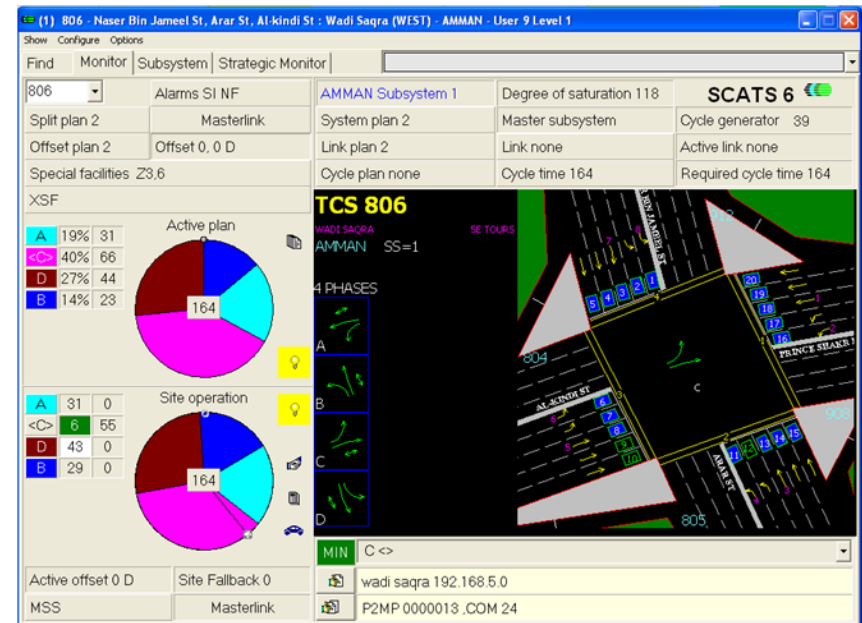


Smart City Project 1

Traffic Monitoring and Traffic Lights Programming

Some details:

- *Traffic control and surveillance.*
- *Greater Amman municipality (GAM) own the initiative.*
- *The project first thought in 1994, implemented in 2007 in Amman city.*
- *The first phase on 2007 32 intersections and still implementing to reach 140 intersections, till now reached 96 intersections.*



Smart City Project 1



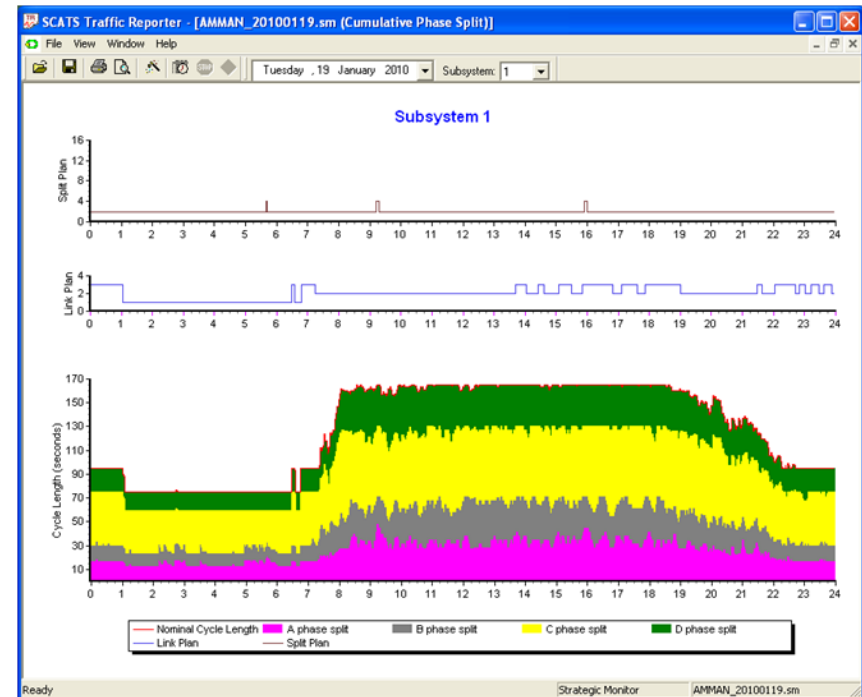
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Traffic Monitoring and Traffic Lights Programming

Some details (Cont.):

- *Using SCATS system (Australian) to program and monitor intersection.*
- *Congestions and pollution.*
- *Own funding by GAM. The total cost over 4 million JD.*
- *Traffic engineering Dept. at GAM with the help of traffic police department.*
- *The impact was great as Jordan was the first in the arab region.*
- *50% reducing pollution.*



Smart City Project 2

Bus Rapid Transit

Objectives:
Solves traffic congestions,
good transportation, Environment



Bus Rapid Transit

Some details:

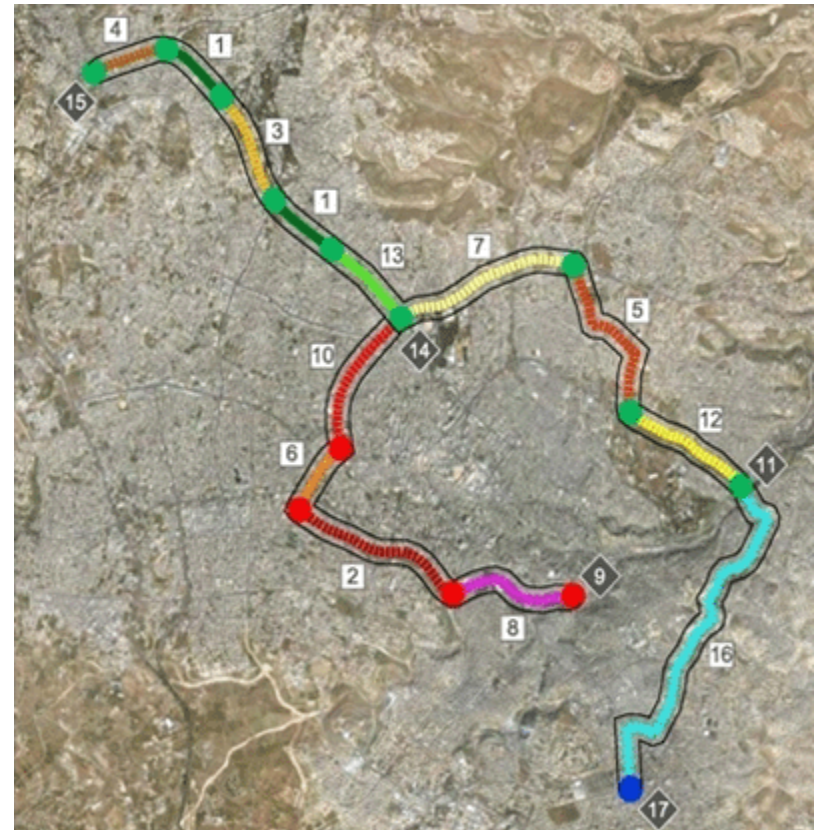
- *Bus Rapid Transit aims to solve the transport problem in the city.*
- *The project is a city council initiative.*
- *The project covers the whole city (32 KM) and it impacts Zarqa city.*
- *The project is in its pilot phase .*
- *It is based on Bogota (Colombia) city project.*
- *Transferability challenges are: How to customize, Topography and culture.*



Bus Rapid transit

Some details (Cont.):

- *Funded by Agence Française de Développement (AFD). Public private partnership (PPP).*
- *The project's cost is 167 million US Dollar*
- *Traffic Engineering Department at GAM is responsible of project's everyday management.*
- *Stakeholders are ministry of public work& housing, ministry of transport, prime ministry and GAM.*



Air Quality Monitoring System

Some details:

- It is a governmental initiative. The system covers the whole city of Amman. The system is in its operation phase.
- The air quality monitoring system concentrates on two aspects, the measurement of ambient air in urban settings and the measurement of industrial emissions. The project focuses on ambient air quality monitoring system, industrial emissions monitoring, monitoring of mobiles sources of air pollution and create an action plan. A seven air quality monitoring stations are installed within Amman city area.



Air Quality Monitoring System

Some details (Cont.):

- The project objective is to monitor and control air pollution. The Ministry of Environment implemented the project. Project's stakeholders are GAM, Drivers and Vehicle Licensing Department of the Police, Ministry of Transport, Ministry of Health, Jordan Institute for Standards and Metrology, Traffic Authority

Renewable Energy

Some details:

- Renewable Energy & Energy Efficiency Law of 2012.

Objectives of this Law:

- Exploiting Renewable Energy Sources
- Contributing to environmental protection and achieving sustainable development.

Ministry of Energy and Mineral Resources launched three phases to invest in building Renewable energy power plants (250 MW + 400 MW + 400 MW).



Renewable Energy

Some details (Cont.):

- JEPCO as distribution company in Amman city has approved and connect 288 applications with overall capacity 7.7 MW since 2012.



E-Government Program

The program comes within the development initiatives and projects adopted by the Kingdom to achieve sustainable development in all aspects of life.

E-Government Program Initiative:

- Improve service delivery
- Raise the productivity and efficiency of public sector
- Provide better services to individuals and business
- Increased ROI
- Provide the required information with high accuracy in a timely manner
- Development of skills and achievement
- The provision of infrastructure and technology needed to provide e-services
- Increase the level of security of information

E-Government Program main output is to provide four categories of services:

- **Vertical Service** (service is provided by one single government entity, e.g. The Domain Registration (.jo) provided by National Information Technology Center (NITC), University Applications and other services)
- **Cross-Governmental Service** (Services are Services which involve more than one government entity, e.g. The Vocational License service provided by Greater Amman Municipality, borders visas and other services)
- **Shared Services** (Services which is being developed, "centrally" one time only and serve all government services, such as Jordan E-Government Portal, SMS Gateway.(94444), Secure Government Network SGN, E-payment gateway of Jordan)
- **Composite Service** (systems or applications between the government and various sectors of the most important government resources planning systems (GRP) Examples include: financial systems, systems and personnel systems, procurement and materials management systems (stores and warehouses), and document archiving systems)

MOICT other initiatives:

- ICT Education & Enterprise Initiative (BRIDGE)
- National Broadband Network (NBN)
- Knowledge Stations
- Graduate Internship Program

Thank You for Your Attention

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