

# Qatar's Nation-Wide GIS

## Cooperation on Local and Regional Levels

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Regional Seminar on Geospatial Information Management  
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## Most Important Elements of Qatar's GIS

Since its inception twenty years ago, Qatar had adopted five elements that led to its success:



1. Establishing The Centre for GIS
2. Common standards
3. Data Sharing
4. Inter-Agency Coordination
5. Nationwide Digital Mapping Program

An aerial photograph of a city, likely Dubai, showing a mix of modern and older buildings, a large canal on the left, and a highway. A vertical pink line runs through the center of the image. Overlaid on this line are several semi-transparent white text boxes with a grid pattern, arranged vertically from top to bottom. The text in the boxes is: Cabinet, National Committee for Coordination of Government Services, National GIS Steering Committee, The Centre for GIS, Managerial Group, and GIS Coordinators Group.

Cabinet

National Committee for Coordination of Government Services

National GIS Steering Committee

The Centre for GIS

Managerial Group

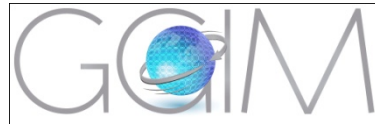
GIS Coordinators Group



# 1. The Centre for GIS



- CGIS updates and provides Qatar's Digital Topographic Base Map and geodetic network.
- It adopted the latest Positioning Technologies and makes its data available.
- It also maintains the high speed network (GISnet) making GIS data available to current and future users.
- CGIS plays the vital role of coordinating the nation-wide GIS implementation.



## 2. Common standards



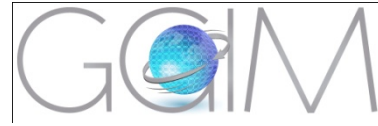
- Common standards for collecting, representing, storing, retrieving and sharing GIS data among all agencies.
- Avoiding incompatibility among different types of data models.
- Cutting down redundancy, cost.



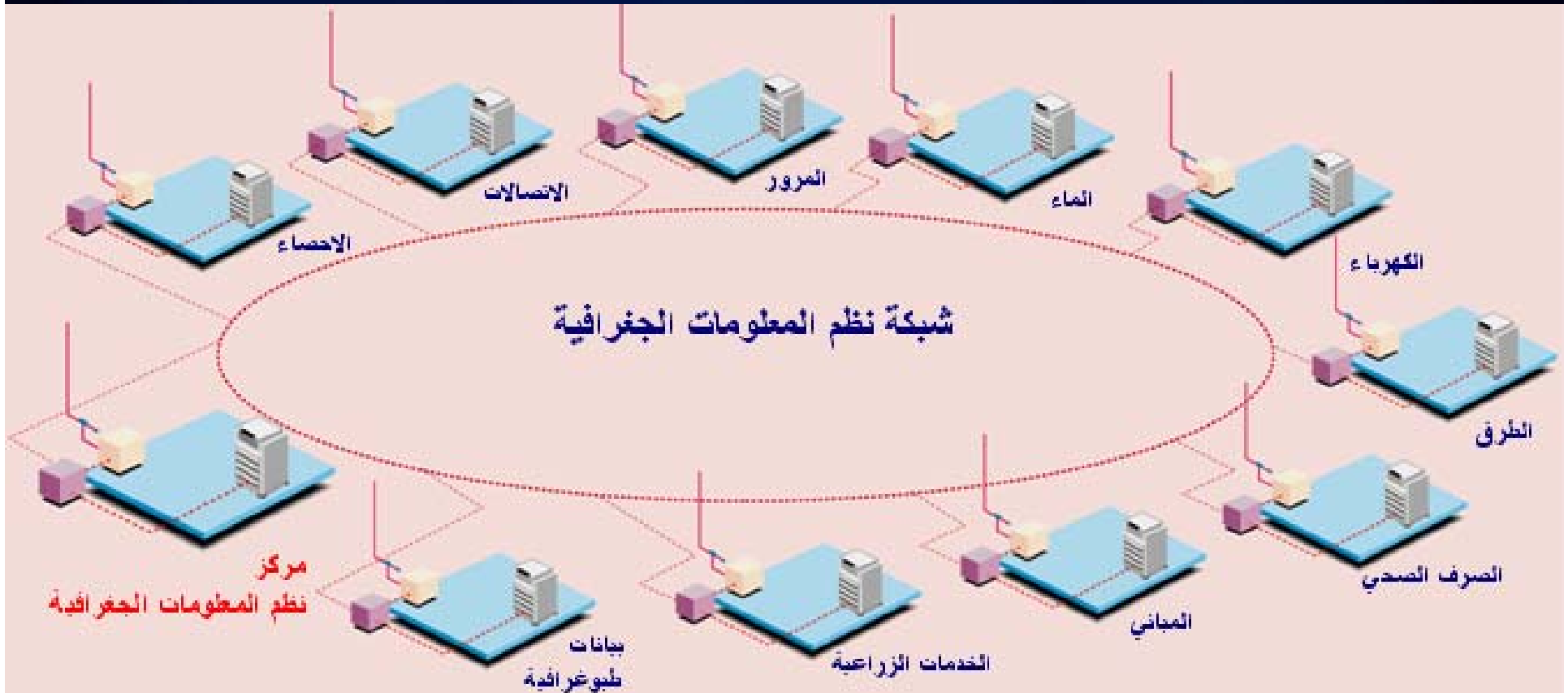
### 3. Data Sharing

- The high speed network (GISnet) links over 60 agencies using GIS in their day-to-day activities.
- Interconnects the distributed spatial databases throughout Qatar, allowing every user, in every agency, immediate access to all publicly available GIS data in the country.
- Great saving of time and money. Something else other countries aspire for achieving.
- Great appreciation to all ministries and organizations which are actively updating and sharing their data and all those who are utilizing the data.

37	Kahrammas - Rayyan Division	كهرما - الريان	32
38	Qtel - Rayyan Division	اتصالات قطر - الريان	32
39	Internal Security Force	لقوىيا - قوة الأمن الداخلي	33
40	Qatar University	جامعة قطر	34
41	Qatar University - Department of Architecture and Urban Planning	جامعة قطر - الهندسة المعمارية والتخطيط العمراني	34
42	Qatar University - Social & Economic Survey Research Institute	جامعة قطر - معهد البحوث الاجتماعية والاقتصادية والمسحية	34
43	Qatar Petroleum - IT	قطر للبترول - نظم المعلومات	35
44	Al Wakrah Municipality	بلدية الوكرة	36
45	Animal health Affairs	شؤون الصحة الحيوانية	37
46	Al Dhaayen Municipality	بلدية الظهيان	38
47	Al Khor Municipality	بلدية الخور	39
48	Umm Salal Municipality	بلدية ام صلال	40
49	Al Shamal Municipality	بلدية الشمال	41
50	Supreme Council of Health	القطري الاطري للصحبة	42
51	Qatar Amiri Guards	الحرس الاميري	43
52	Supreme Council of Education-Airports area	القطري الاطري للتعليم - منطقة المطار القطري	44
53	Qatar Museums Authority	هيئة متاحف قطر	45
54	Ministry Of Business & Trade	وزارة الاعمال و التجارة	46
55	Supreme Council Of Information and Communication Technology ( ICT)	القطري الاطري للاتصال و تكنولوجيا المعلومات	47
56	Qatar University - Environmental Studies Center	جامعة قطر - مركز الدراسات البيئية	48
57	Qatar Development Bank - Department of Real Estate Loans	بنك تنمية قطر - ادارة القروض العقارية	49
58	Qatar University - Faculty of Education	بنك تنمية قطر - كلية التربية	49
59	Ministry of Education - Department of Information Technology	وزارة التعليم - ادارة تكنولوجيا المعلومات	50
60	Ministry Of Energy And Industry	وزارة الطاقة	51
61	Ministry of Economy & Finance - Government Housing	وزارة الاقتصاد و المالية - الاسكان الحكومي	52
62	Q-Post - General Postal Corporation	الهيئة العامة للبريد - كاتالوجات	53

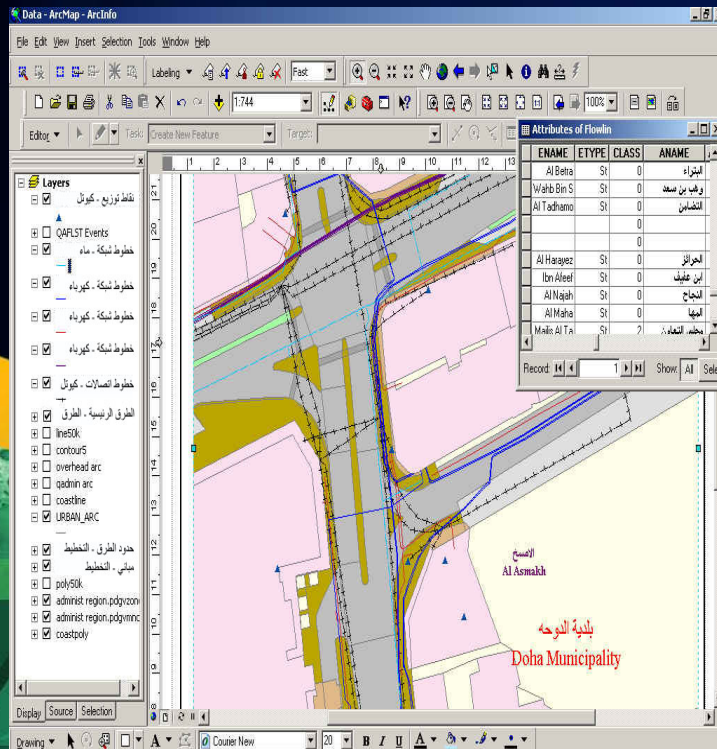


# Layout of the GISNet





# The Mission ..... Applications & Data Sharing

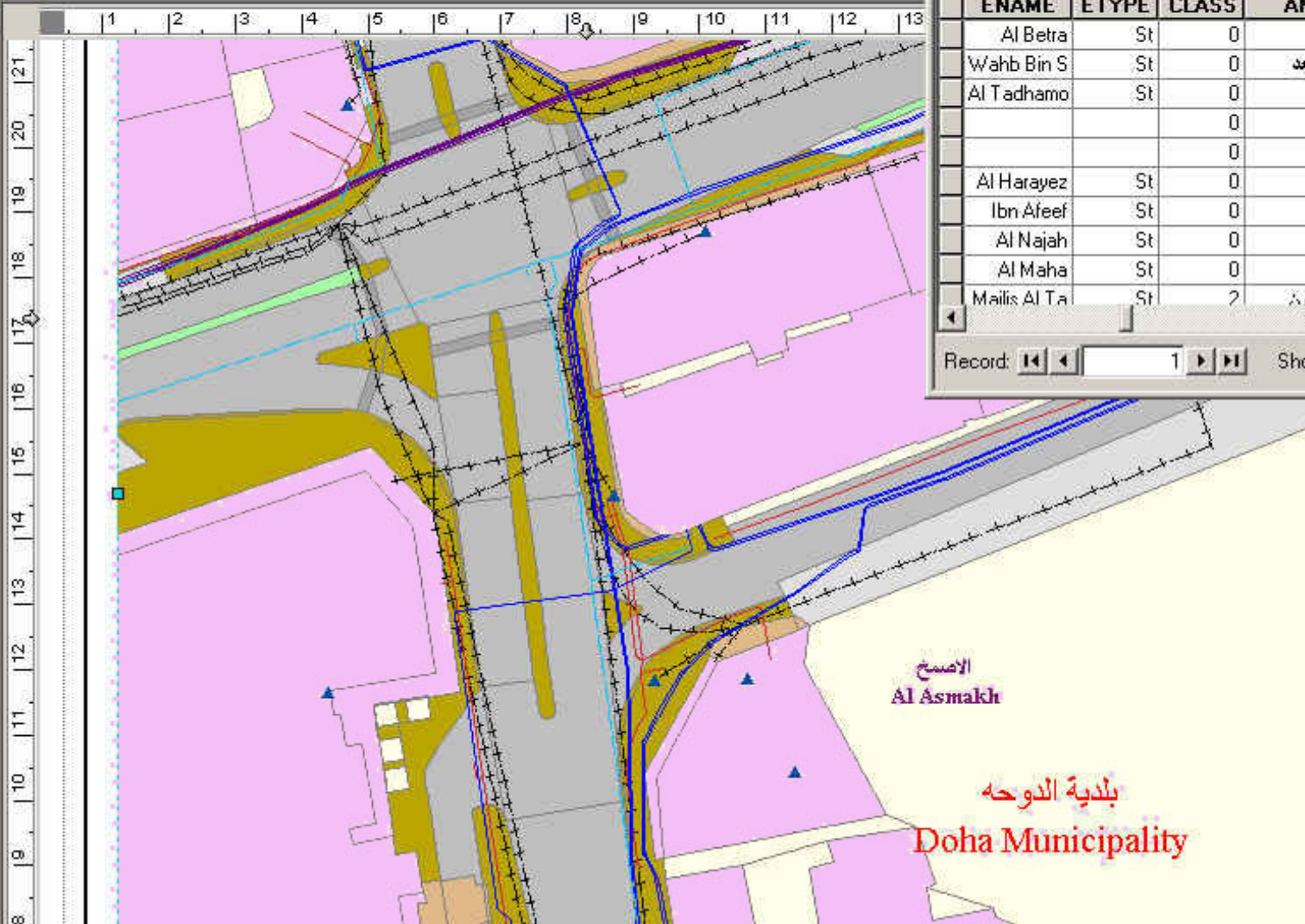


- Since all agencies' public data is available over the GISNet by 24x7
- Decision makers can analyze and use data by accessing GIS data of all agencies.





- Layers**
- نقاط توزيع - كيوتل
  - QAFST Events
  - خطوط شبكة - ماء
  - خطوط شبكة - كهرباء
  - خطوط شبكة - كهرباء
  - خطوط شبكة - كهرباء
  - خطوط اتصالات - كيوتل
  - الطرق الرئيسية - الطرق
  - line50k
  - contour5
  - overhead arc
  - qadmin arc
  - coastline
  - URBAN\_ARC
  - حدود الطرق - التخطيط
  - مباني - التخطيط
  - poly50k
  - administ region.pdgvzoni
  - administ region.pdgvmmc
  - coastpoly



**Attributes of Flowlin**

ENAME	ETYPE	CLASS	AN
Al Beta	St	0	
Wahb Bin S	St	0	
Al Tadhmo	St	0	
		0	
		0	
Al Harayez	St	0	
Ibn Afeef	St	0	
Al Najah	St	0	
Al Maha	St	0	
Mailis Al Ta	St	2	

Record: 1



## 4. Inter-agency Coordination

### ■ Technical Level:

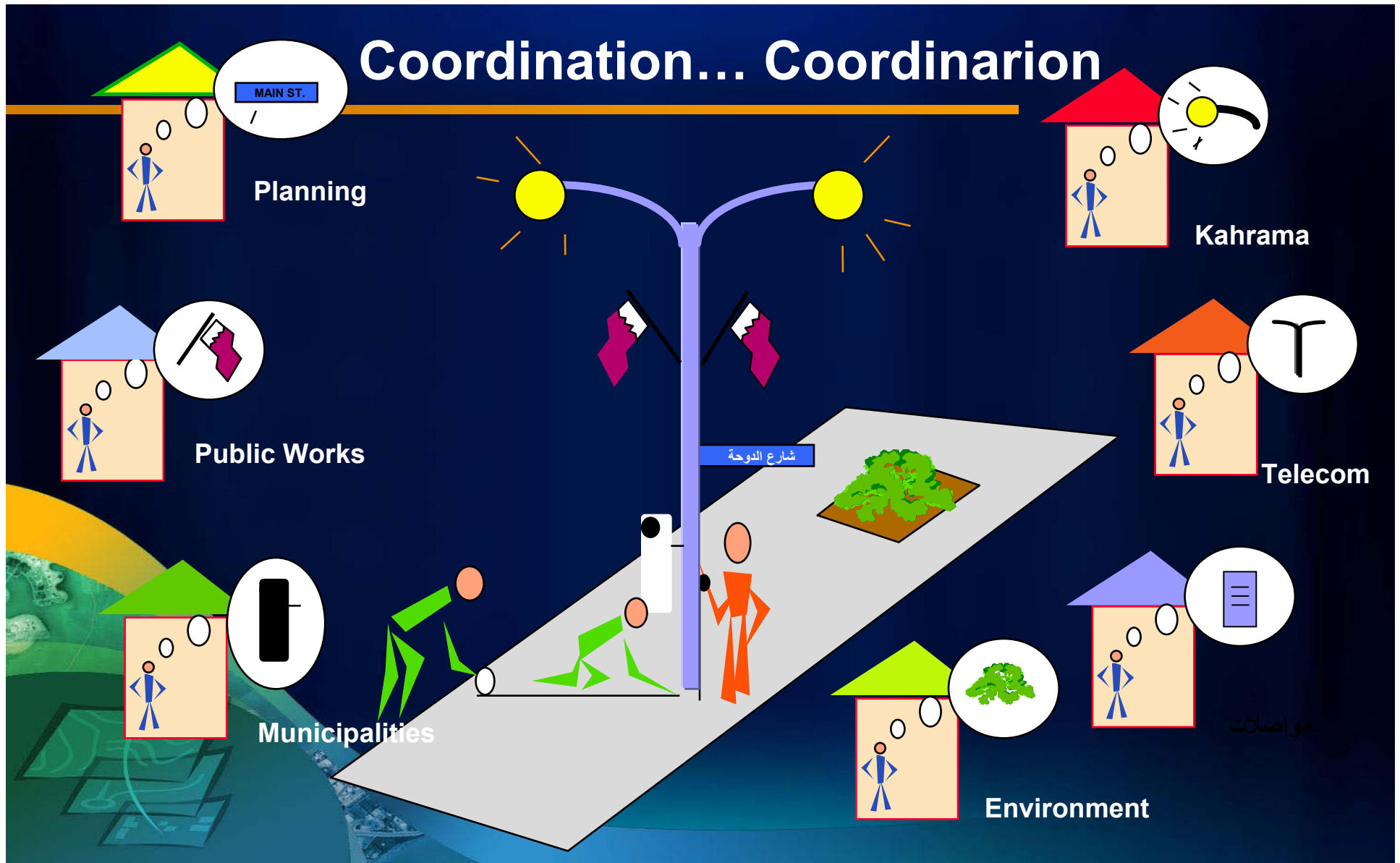
- Chaired by CGIS, Coordinators Group meetings are held on a regular basis; never stopped for last 22 years.
- Representatives from every agency
- Encouraging cooperation, coordination and sharing of GIS activities
- Ensuring adherence to uniform standards and compatibility

### ■ Managerial Level:

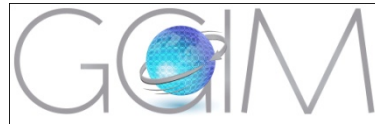
- State level GIS sub-committee meetings on regular basis which consists of GIS managers.



# Coordination... Coordinarion



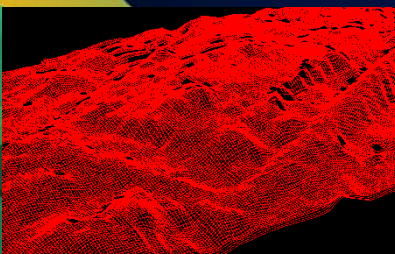
مواصلات

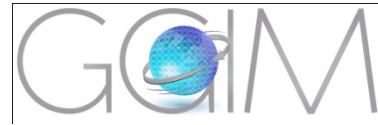


## 5. Nation-wide Digital Mapping Program

The fifth element is the comprehensive database that comprises of:

- High resolution colored Ortho imagery and satellite imagery.
- 3D City Model of Urban areas.
- Highly accurate, Topographic Vector Maps.
- High precision Digital Elevation Model.
- Color Oblique 4-directional Aerial Photography.
- Others.
- The importance of this element is that it serves as the base upon which all other data layers from other agencies are placed.

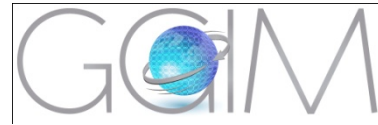




## Reaffirmation

That was a prelude that almost all of you are aware of but it is something we are proud of in Qatar and it is always important to reaffirm its significance





# Examples of National Projects and Applications Utilizing Data Sharing through the GISNet

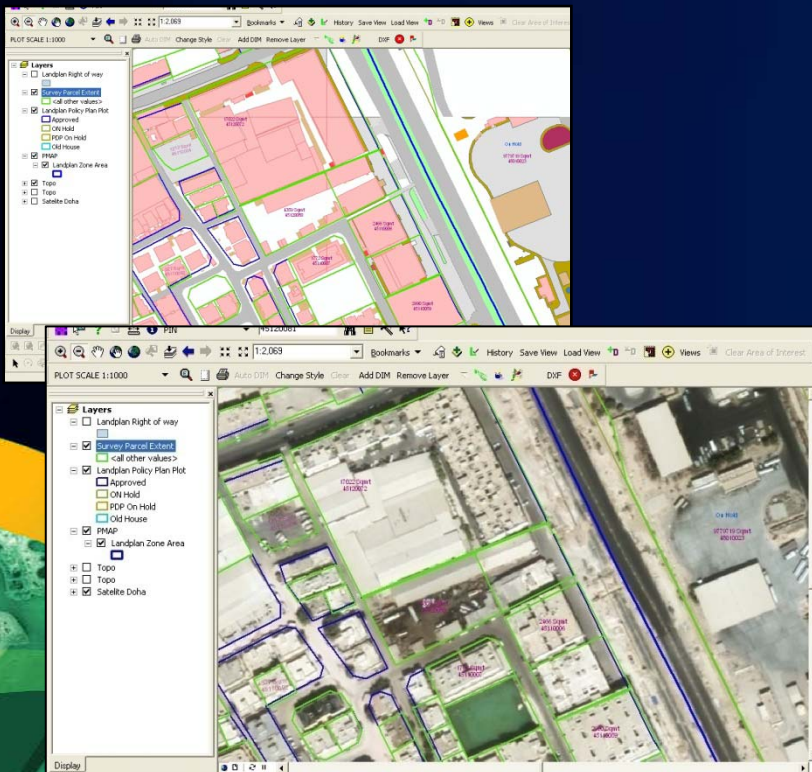




# Land Information System ... Lands & Survey Department

## Data Sources:

- Policy plans and land use data coming from Land & Survey Department.
- Topographic data and satellite imagery coming from The Centre for GIS.

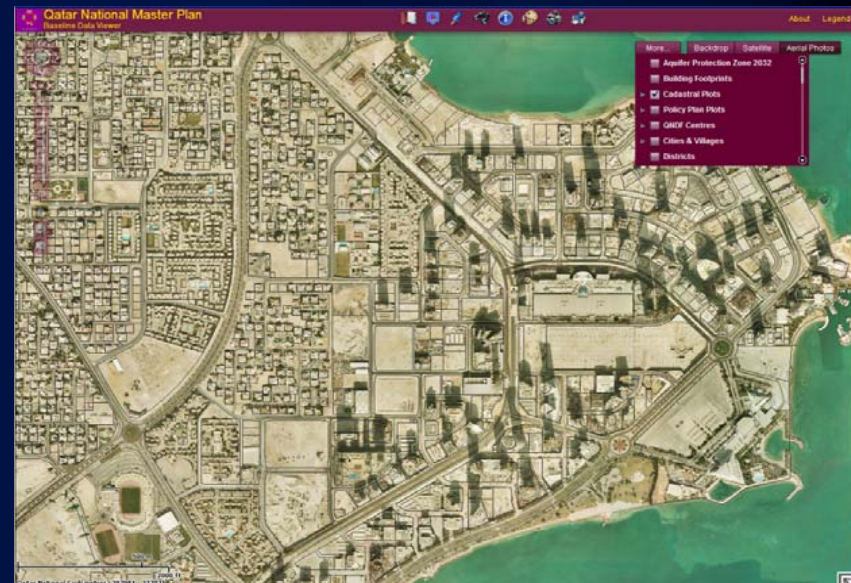




## Qatar National Master Plan (web application) ... Planning Department

### Data Sources:

- Topographic, QARS data and aerial photography coming from CGIS.
- Urban Right of Way and QNMP data from Planning.
- Cadastral and Policy Plans from Lands & Survey Department.
- Drainage data from PWA.
- Water and Electricity data from Kahrama.
- Oil and Gas pipeline data from QP.







# Real Estate Registration System ... Ministry of Justice

## Data Sources:

- Ministry of Interior providing owner name and Qatar ID "QID".
- General Survey Section providing accurate survey for parcels and PIN number.
- The Centre for GIS providing Topographic Database and Ortho images.

نظام المعلومات العقارية

بسم الله الرحمن الرحيم  
وزارة العدل  
إدارة التسجيل العقاري والتوثيق  
نظام المعلومات العقارية

التاريخ: 1996-10-05

نوع بيانات الطلب: مبررات البيانات

تدقيق بيانات الطلب مع قواعد البيانات

رقم عقد: 1 9  
اسم العقار: 17  
رقم العقار: 615  
رقم الوحدة: 5  
رقم المنطقة العقارية: 5

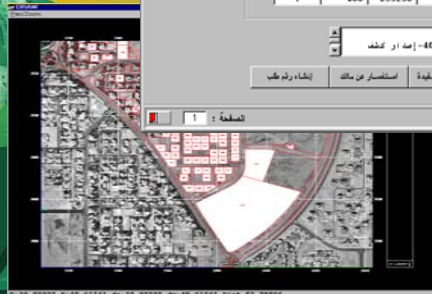
رقم التسجيل	اسم المالك	رقم القاسم	نوع العقار	رقم الوحدة
25063400211	أحمد صالح ناصر أحمد آل شامسي	155200	400	7
	عائلة صالح ناصر أحمد آل شامسي	77112	400	7
	حكومة دولة قطر	82804	2400	7
25863400797	محمد طه صالح ناصر أحمد آل شامسي	154780	400	7
253363400515	علي صالح ناصر أحمد آل شامسي	135236	400	7

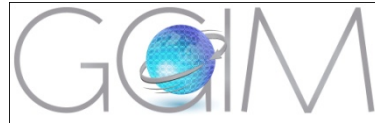
ملاحظة: يرجى التأكد من صحة البيانات المدخلة في الحقول أعلاه.

إعداد: 488389 - إمداد كنفذ صالح  
إعداد: 488390 - إمداد كنفذ صالح

التفاصيل العقار | التفاصيل الوحدة | تفاصيل المنطقة | إحصاءات المنطقة | استفسار من مالك | إنشاء وثيقة طلب

البرامج: VALID

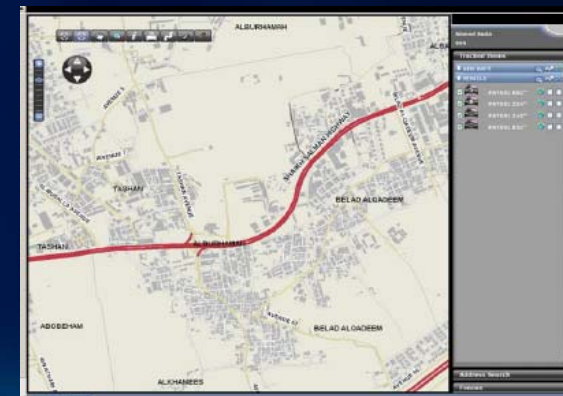


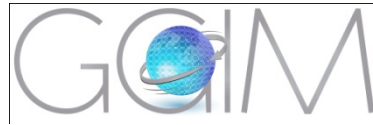


## Call taker and Command Aided Dispatching ... Ministry of Interior

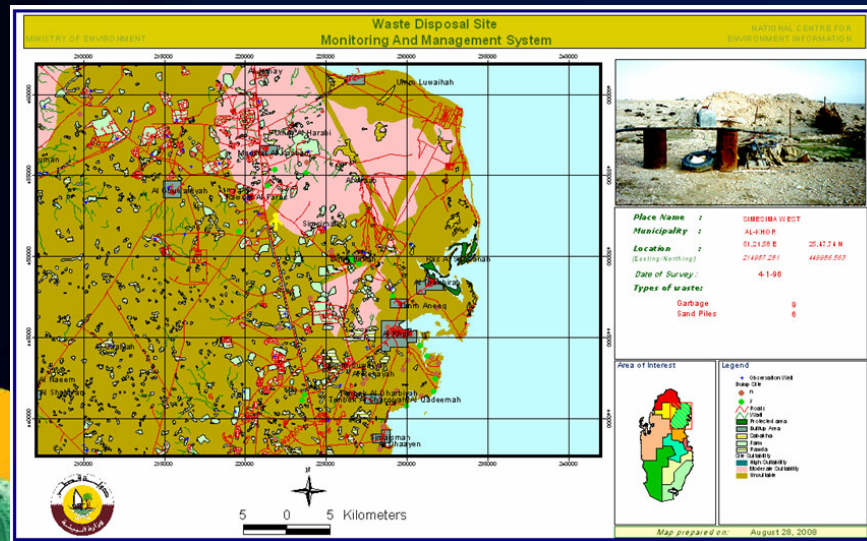
### Data Sources:

- Topographic, Routing & Navigation, QARS data, and satellite imagery coming from CGIS.
- Roads flow line coming from public works Authority.
- Fleet and security data from MOI.
- Water & Electricity Data from Kahrama.
- Telecommunications data from QTEL.

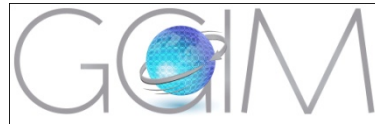




## Environment Site Assessment and Management System ... Ministry of Environment



- Topographic, Geographic names data and satellite imagery coming from CGIS.
- Administrative boundaries from Lands & Survey Department.
- Natural reserves, farmland, environmentally sensitive sites data from Ministry of environment.



## National Endeavors with GIS playing a major role

Following are examples of endeavors in Qatar relying heavily on geospatial input:

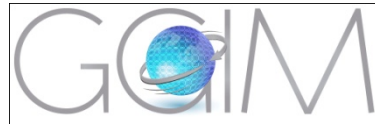
- Qatar's National Vision 2030
- Qatar National Development Framework (QNDF)
- The Qatar National Master Plan Project (QNMP)
- Qatar Area Referencing System (QARS)



# Qatar National Master Plan QNMP

- The Qatar National Master Plan Project (QNMP) is creating an integrated package of plans, policies and regulations applicable to national, municipality, city and town jurisdictions.





## Qatar Area Referencing System - QARS

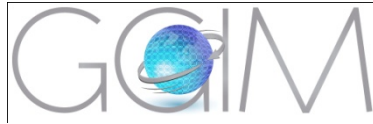


- Created a comprehensive database that serves the requirements of all concerned agencies in Qatar by using GIS to link the new property number with its geographic location and the numbers from other agencies. (QTEL, Electricity, water, PIN Number, etc.).
- This shows that the project is not just installing property number plates.





GGIM  
UNITED NATIONS PROGRAMME ON  
GLOBAL GEOSPATIAL  
INFORMATION MANAGEMENT



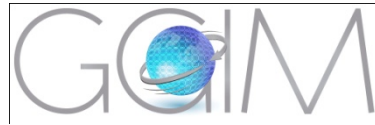
CGIS  
قطر QATAR



## Qatar Area Referencing System - QARS



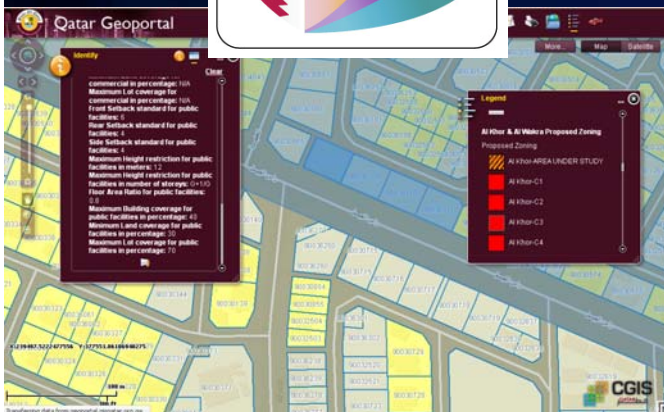
- Applications and services resulting from the project are many.
- They include: Security, Traffic and emergency response systems, trade, statistics, education, municipalities, Post and several others.



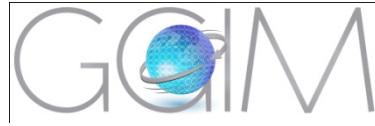
## Areas we are focusing on



- Increased adoption of web services which cuts down cost, increases and diversifies the range of users.
- Increased adoption of mobile applications which delivers geospatial services to the masses.
- Utilizing GIS in planning built and natural environments in an integrated process taking into consideration sustainability and resources management.

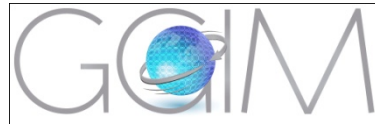






## Cooperation on the regional level

- CGIS was active in the high level technical committee that supervised the process of marking borders with Saudi Arabia including the production of Digital and printed maps.
- Member of GCC countries committee on a municipal level for coordinating geographic features names and symbology.
- Member of GCC countries committee for standardizing military maps.



**Thank You**

