

IRAQ'S MEGA PROJECTS

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I: INTRODUCCION

- Financing Iraq federal projects is entirely dependent on revenues obtained from export of hydrocarbons, currently oil. Iraq prior to 1991 exported pipeline quality gas and products.
- Restructuring Iraq requires enormous number of mega projects in many sectors above all is the Oil, Electricity, Water Resources, Transport and Industry projects.
- Oil production will be in the region of 6 million barrel per day “B/D” by end of 2017 heading to about 8 million B/D in years to follow. The creation of Basra Gas Company (BGC) that started functioning on May 1st 2013, is only a beginning for a major revolution in the Iraqi Gas Industry

- Electricity generation and supply is now only about 8500 MW while the country needs some 14000 MW.
- Water availability and supply is in real shortage awaiting resolution by irrigation and desalination projects.
- Several pre-1991 petrochemicals and fertilizers projects await re-activation.
- The basis for selection of projects in this presentation is mostly requirements of the national 5-yr plan plus projects previously selected in the past long and medium terms plans that were initiated but either stopped or suspended.

- Projects in Kurdistan, not part of the National Development Plan 'NDP', are largely Hydrocarbon Exploration and Development projects handled by the provisional government KRG.
- In absence of official project cost, the quoted estimate is based on international cost indices. This and project priority is further defined in Section-III.
- While this paper was being prepared, the PM Advisory Commission announced that they will launch the National Integrated Strategy soon (June the 12th?). The list of mega projects presented her may have to be revised based on the main goals of that strategy.

II: PROJECTS BY SECTORS

Live projects requiring \$85-100 billion are shown below:

| Live projects | | | |
|---------------|---|----------------------|--|
| Sector | Project | Estimated \$ billion | Remarks |
| Oil & Gas | Oilfield development contracts | 20-25, 15 by 2017 | Fields of Bid Rounds 1 & 2 |
| | Water Injection Mega Project, Fig-1 | 10-12, 5 by 2017 | In 15-20 reservoirs of contracted fields Source: Sea water or Main Outfall Drain Preparation for commencing FEED |
| | Gas utilization (Basra Gas Company) | 5-10 by end 2017 | 4-5 million mmscfd associated and free gas from Sib, Akkas & Mansuriya Fields |
| | Iraq - Jordan pipeline & Export Refinery in Aqaba | 15-17 | In preparation for route survey and FEED |
| Refining | Kerbala Refinery: 140,000 B/D | 3 | By end 2016. FEED available, no offer yet |
| | Maisan Refinery: 150,000 B/D | 3.5 | By end 2016, FEED available, no offer yet |
| | Addition of 100,00 B/D to existing refining centers | 2 | By end 2015 |
| Electricity | 20830 MW power generation (Fig 3) by 2017 including - 14 gas fed stations during 2012-2015 - 400 MW renewable energy sources: 2013-2016 | 27, 4.5 each year | Based on 5-yr plan of MoE Revise progress by end 2013 |

Prospective mega projects expected to be announced in near future (to be aware of) are as follows:

| Prospective projects | | | |
|----------------------|--|---------------------------|--|
| Sector | Project | Estimated \$ billion | Remarks |
| Oil & Gas | Nasiriya Refinery: 300,000 B/D | 7 | Currently part of integrated package with Nasiriya Field, Bid opening expected by Dec 13 |
| Water Resources | The Main Outfall Drain Desalination, Fig 2 | Pending feasibility study | Tender Docs for the study under preparation |
| | Dams: Available over 100 sites, many are under study, Fig-4A & B | Pending study results | Capacity of the renovated scheme can supply water for the "Mega Water Injection Project" |
| Environment | National Green Belt, Conceptual schematic in Fig 5 | 25 pending study | Requires 5-10 years, Conceptual proposal available |
| Transport | Great Fao Seaport | 0.25 for Wave Breaker | Location offshore Fao, Contract for wave breaker awarded. Other phases are under consideration |

Mega projects under close consideration by some sources in Iraq requiring re-activation and containment in the coming 5-year plan are the following:

| Projects to be reactivated | | | |
|----------------------------|---|----------------------|--|
| Sector | Project | Estimated \$ billion | Remarks |
| Oil & Gas | Rehabilitation of Iraqi-Turkish Export pipeline | Two | Restore designed capacity of 1.5 million B/D |
| Transport | Metro Baghdad | Exceeds 10 billion | FEED Available |
| Industry | Petrochemical Complex, PC3 | NA | FEED available, partly started before 1991 Gulf War |
| | Expansion of Urea plants at Baiji-4 & Khor Elzubair sites | NA | Study to be activated |
| | Mining and utilization of Bentonite & Kaolin | NA | Geological Survey & Mining Exploration" of MoI made a start. TDs for Bentonite are available |

III: CONCLUSIONS

1- There are 8 Mega projects under the supervision of MoO and MoE requiring \$85 – 100 billion during the years 2013-2017.

2- There are mega prospective projects belonging to ministries of Oil, Water Resources, Environment and Transport. Two of the projects require at least \$32 billion. The next five year plan is expected to accommodate some or all

3- There are 5 mega projects belonging to ministries of Oil, Transport and Industry worth of reactivation

- Basra Line: Phase-1
- BL1: 3 x 48" Fao- Rumaila
- BL2: 2 x 48" N Rumaila- Nasiriya
- BL3: 24" Nasiriyan- Manifold 1
- Leading to Gharraf & Rafidain
-
- Maisan Line: Phase-2
- ML1: 48" Fao- B Umer-Halfaya
- ML2: 28" Halfaya-Buzurgan
- Branch off: Majnoon, Fuqi /Abu Gharab, Badra?, B Umer
-
- Extension Lines (Phase-3/4) Option
- 48" Nasiriya- Ahdeb – E Baghdad
- 16" Branch off E Baghdad-Balad
-
- Branch off (Phase 3)
- N Rumaila- Tuba & Ratawi

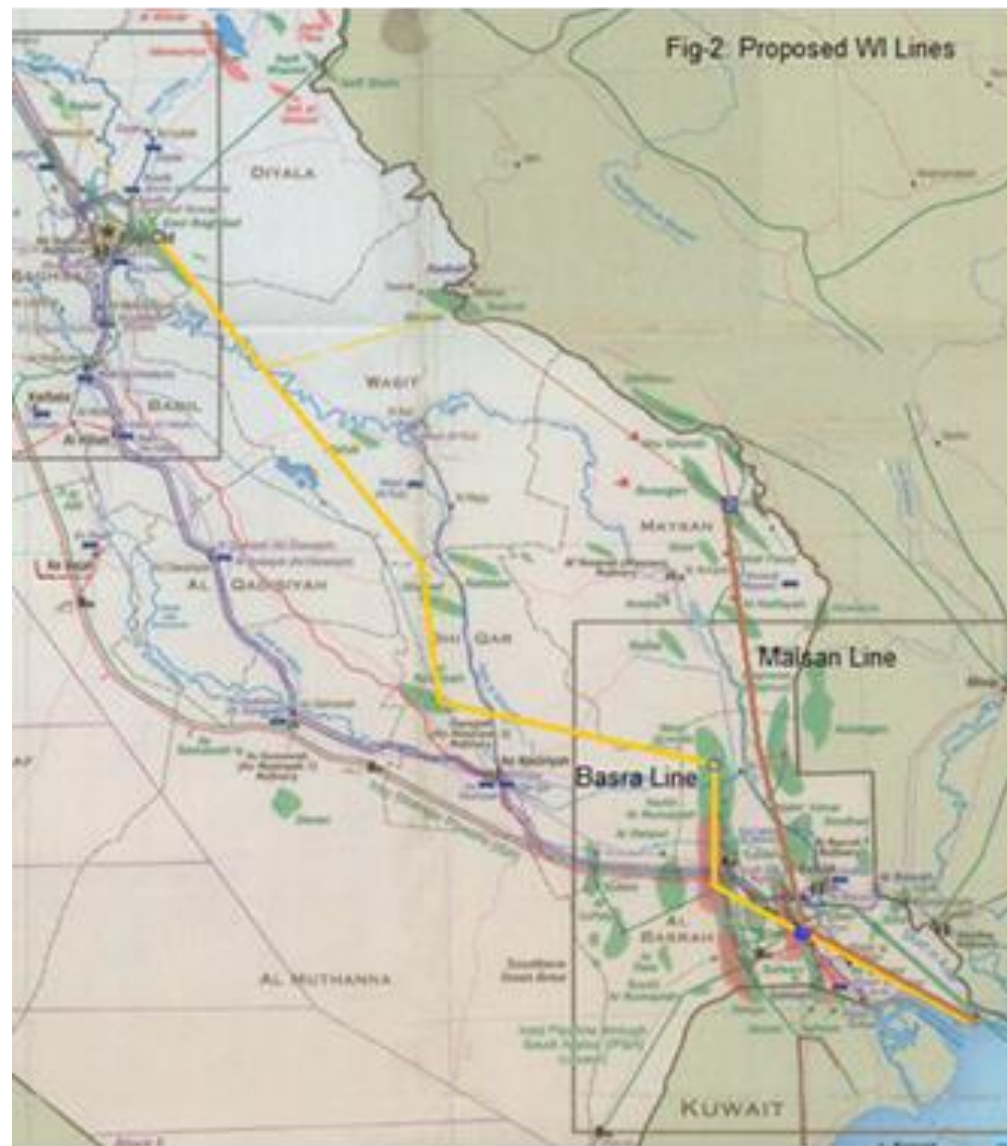


Figure-1: Water Injection pipelines (Conceptual)

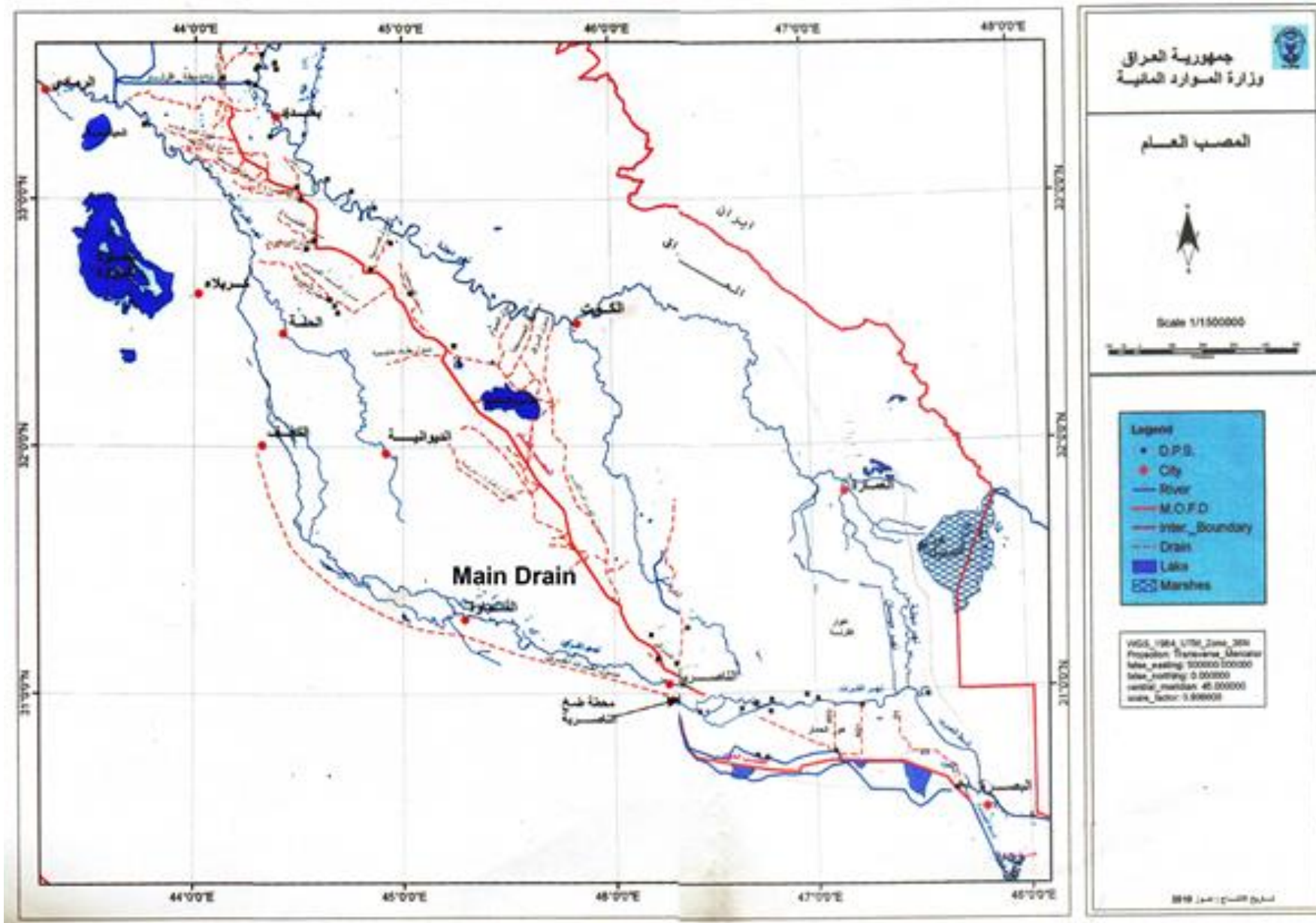
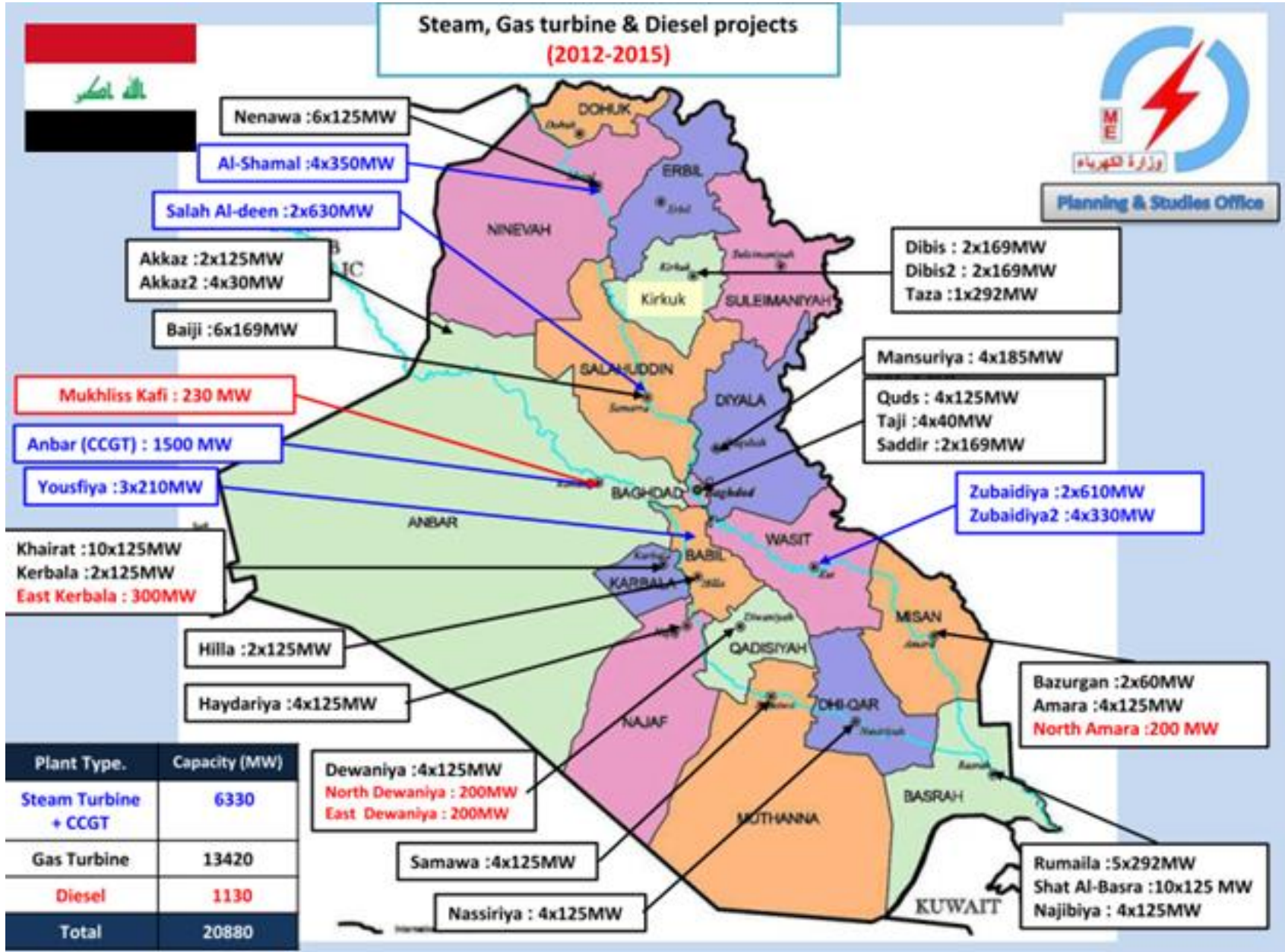


Figure-2: Main Outfall Drain (3rd River)

Steam, Gas turbine & Diesel projects
(2012-2015)



| Plant Type. | Capacity (MW) |
|----------------------|---------------|
| Steam Turbine + CCGT | 6330 |
| Gas Turbine | 13420 |
| Diesel | 1130 |
| Total | 20880 |

Figure-3: Electricity projects of the five year plan

Upper Iraq Dams Sites



Fig-4A: Dams sites in upper Iraq

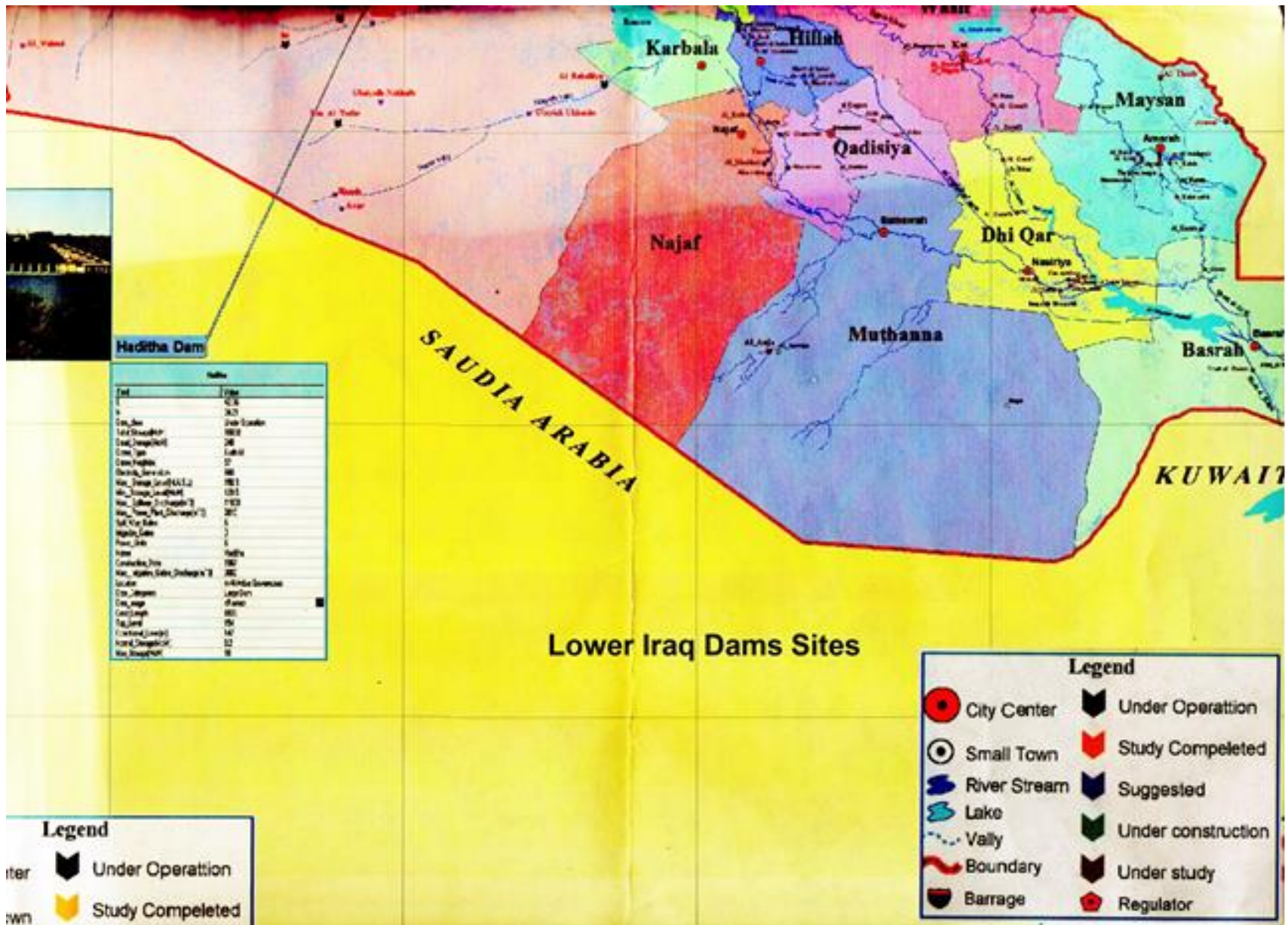


Fig-4B: Dams sites in Lower Iraq

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Figure 5: Proposed National Green Belt

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