

# Technical Study Objectives

Plan the most probably feasible networks.

Prepare the conceptual design.

Perform the cost analysis.



# CURRENT AGRICULTURAL ACTIVITIES



# DESIGN CONSTRAINTS

Exact Project Size.

Water Availability.

Project Area Conditions (Topology, Crossings,..)

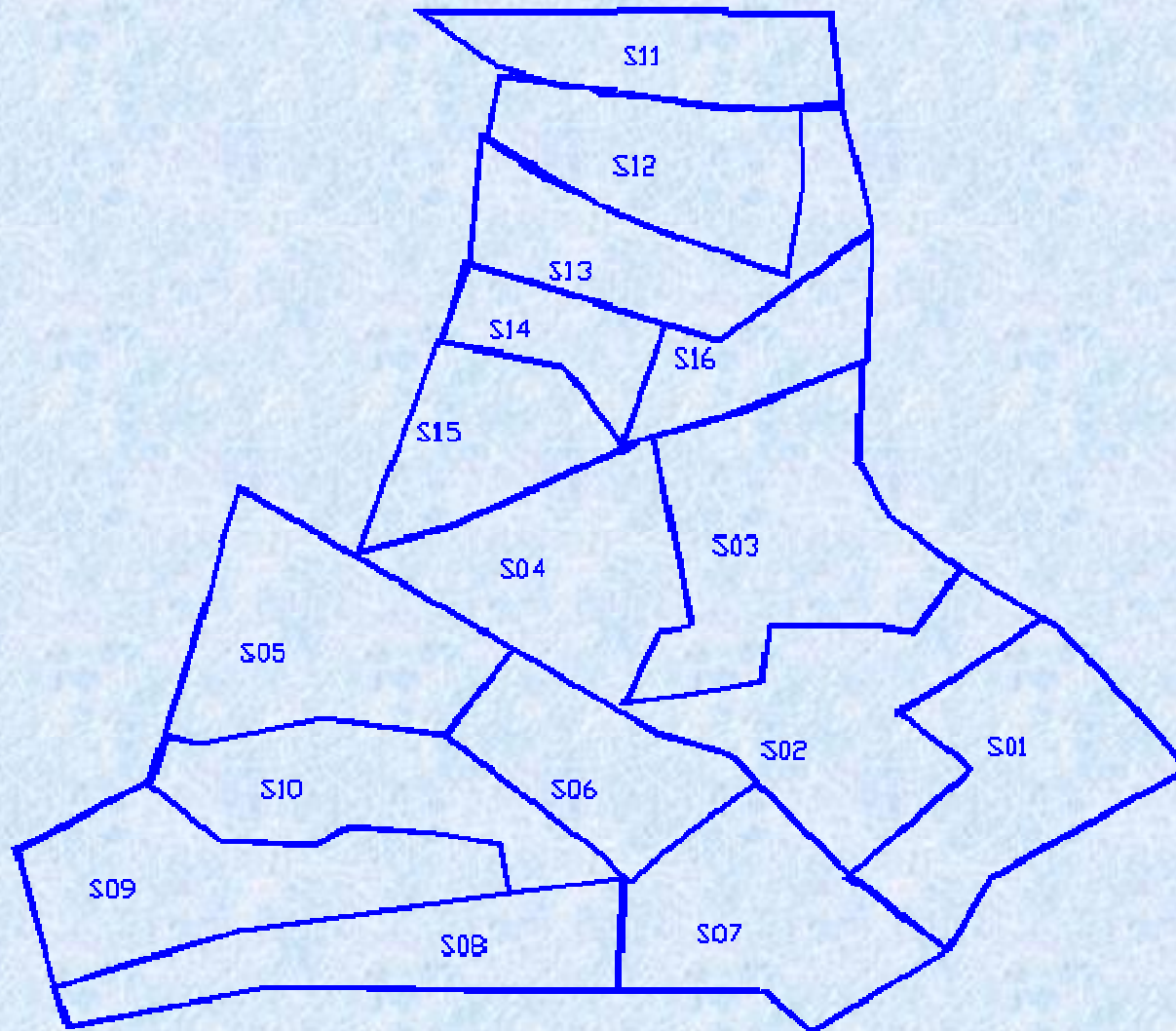
Groundwater Conjunctive use

Project Phasing.

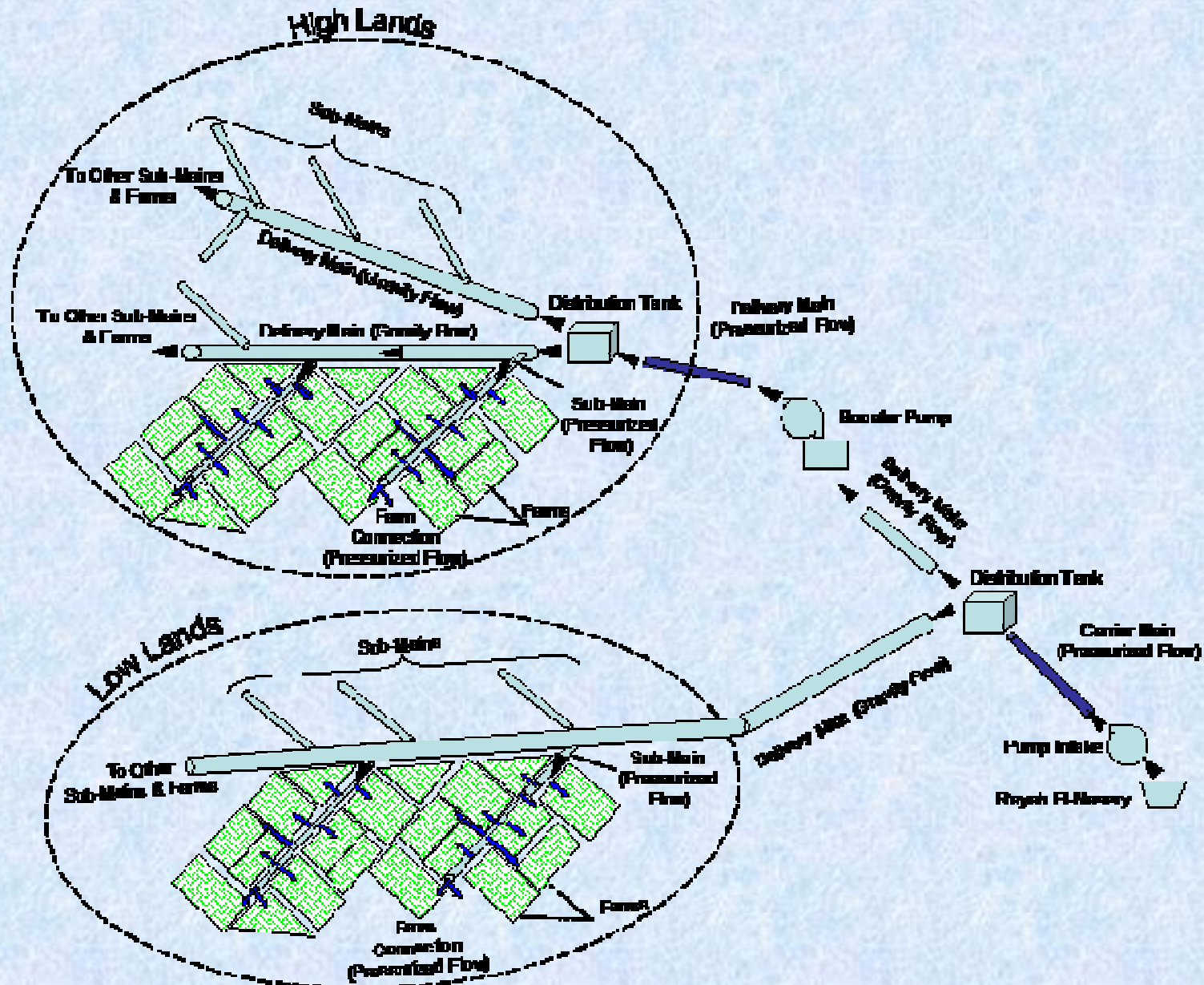
Local Market Conditions.



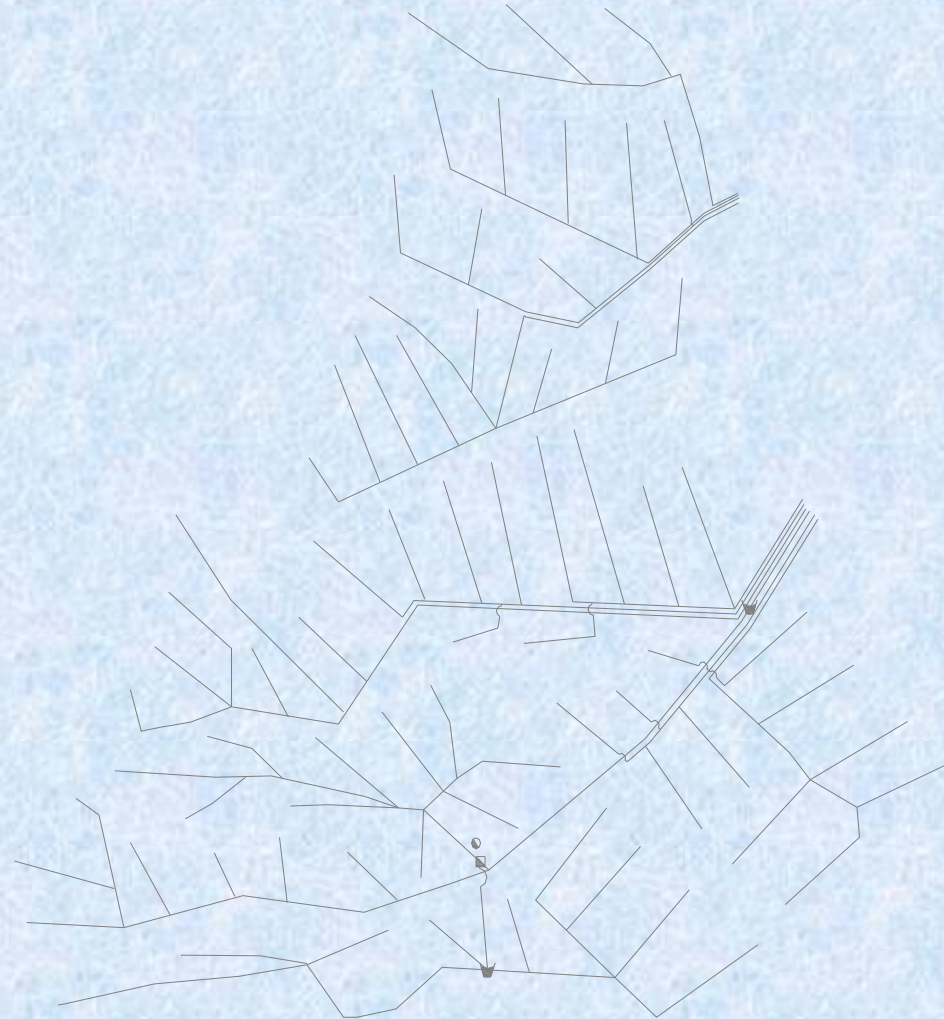
# PROJECT SECTORS



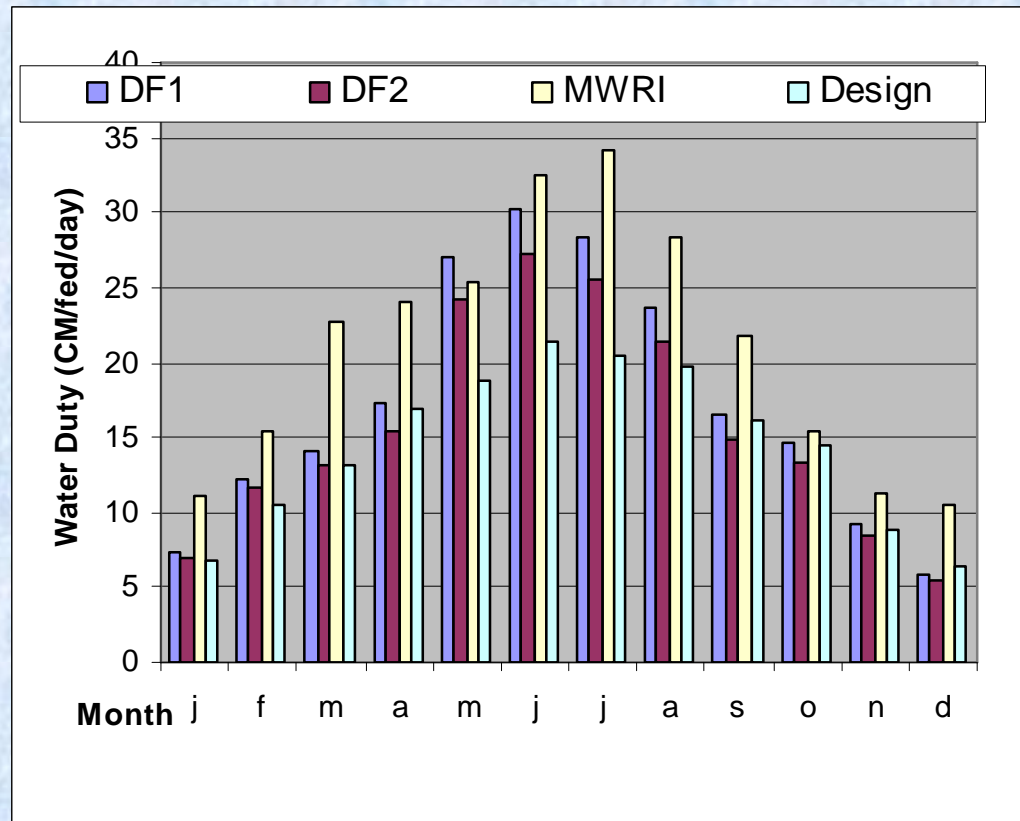
# HYDRAULIC CONCEPT



# NETWORK



# Water Duty



Avg Water Duty (design) = **14.44885** m<sup>3</sup>/fed/day  
 Max. W.D. (design)= **21.32873** m<sup>3</sup>/fed/day  
 Min. W.D. (design)= **6.41303** m<sup>3</sup>/fed/day



# PROJECT COMPONENTS

Component	Code	Description
A	SW	Supplementary Works
B	IN	Intakes
C	IB	Intermediate Boosters
D	SB	Sub-Mains Boosters
E	ES	Electricity Supply
F	MP	Mains
G	SP	Sub-Mains
H	FC	Farm Connections
I	CS	Crossing Structures
J	RS	Roads System
K	OM	O&M Program



# COST ANALYSIS

Component	in million LE	in million US\$	Equivalent in million LE
SW <sup>1</sup>	96.67	4.57	123.17
IN	138.70	40.10	371.28
IB	41.80	11.10	106.18
SB	274.30	89.40	792.65
ES <sup>2</sup>	84.08	8.39	132.78
MP	335.57	2.80	351.81
SP	122.08	0.41	124.44
FC	203.05	0.00	203.05
CS	45.68	1.65	55.25
RS	193.82	0.00	193.82
OM <sup>3</sup>	5.50	1.00	11.30
All Components	1541.25	159.42	2465.73
Physical & Price Contingencies (10%)	154.13	15.94	246.57
Total Cost	1695.38	175.36	2712.32

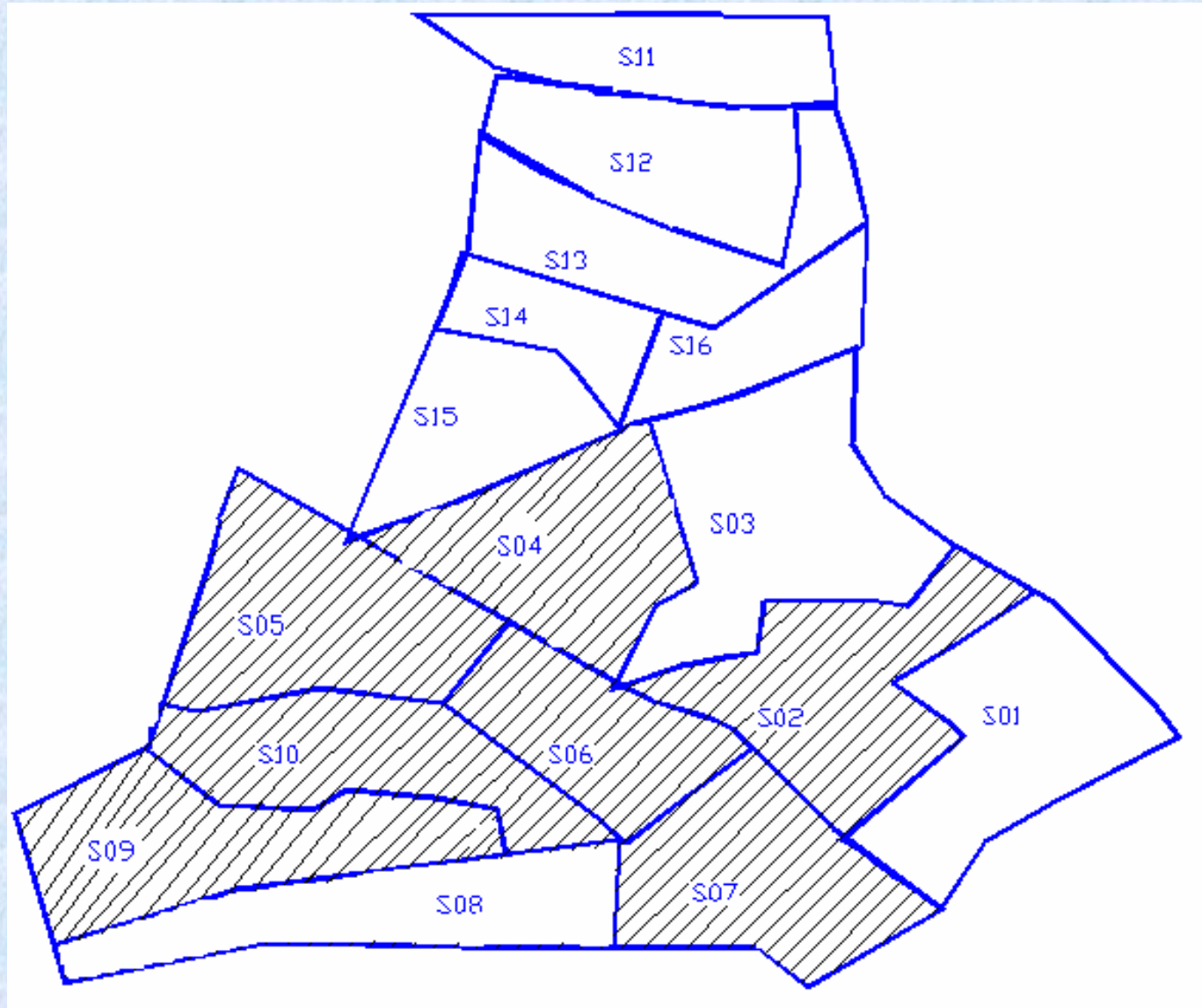
<sup>1</sup> Cost of SW required for Non-Project area = 103.25 million LE

<sup>2</sup> Cost of SW required for Non-Project area = 14.94 million LE

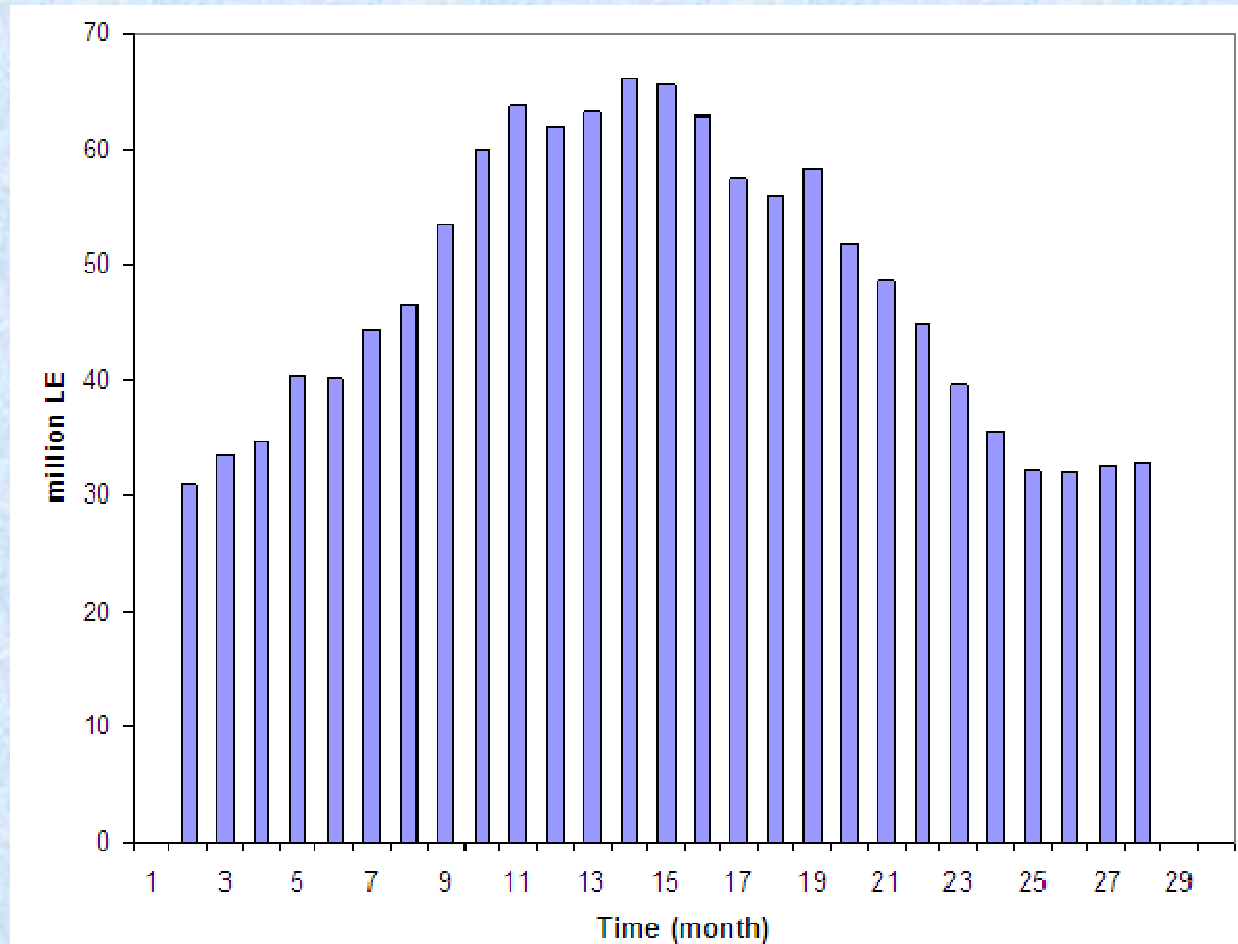
<sup>3</sup> Includes only the investment cost of O&M



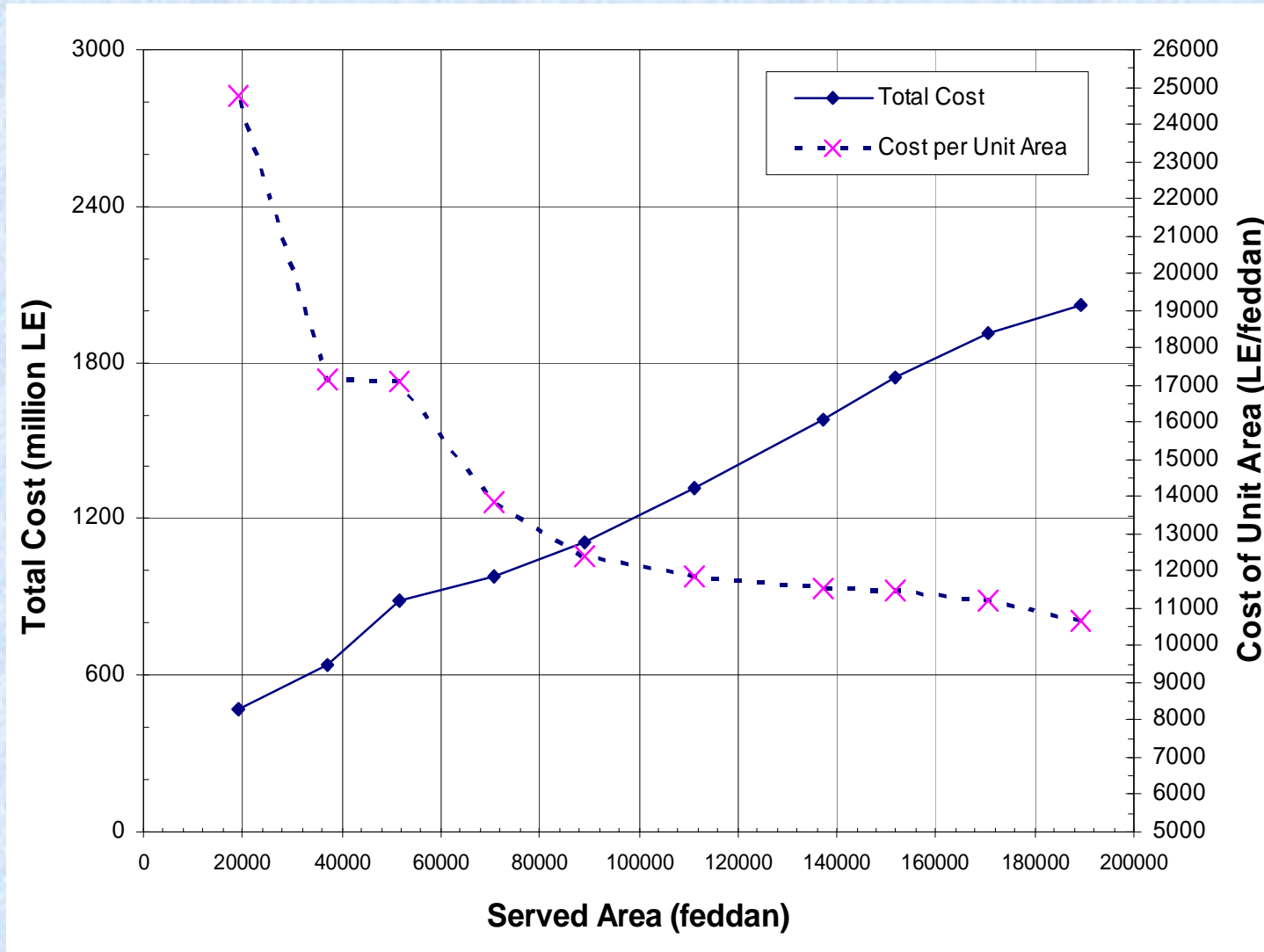
# IMPLEMENTATION PLAN PHASE 1



# CASH FLOW DIAGRAM PHASE 1



# UNIT COST PER CONNECTED AREA



# IMPLEMENTATION PRIORITY

Project Component	Implementation Priority
SW	1
IN	2
IB	5
SB	3
ES	2
MP	3 & 5
SP	4
FC	4 & 5
CS	2
RS	5
OM	4 & 5

1 denotes first priority and 5 denotes last priority

