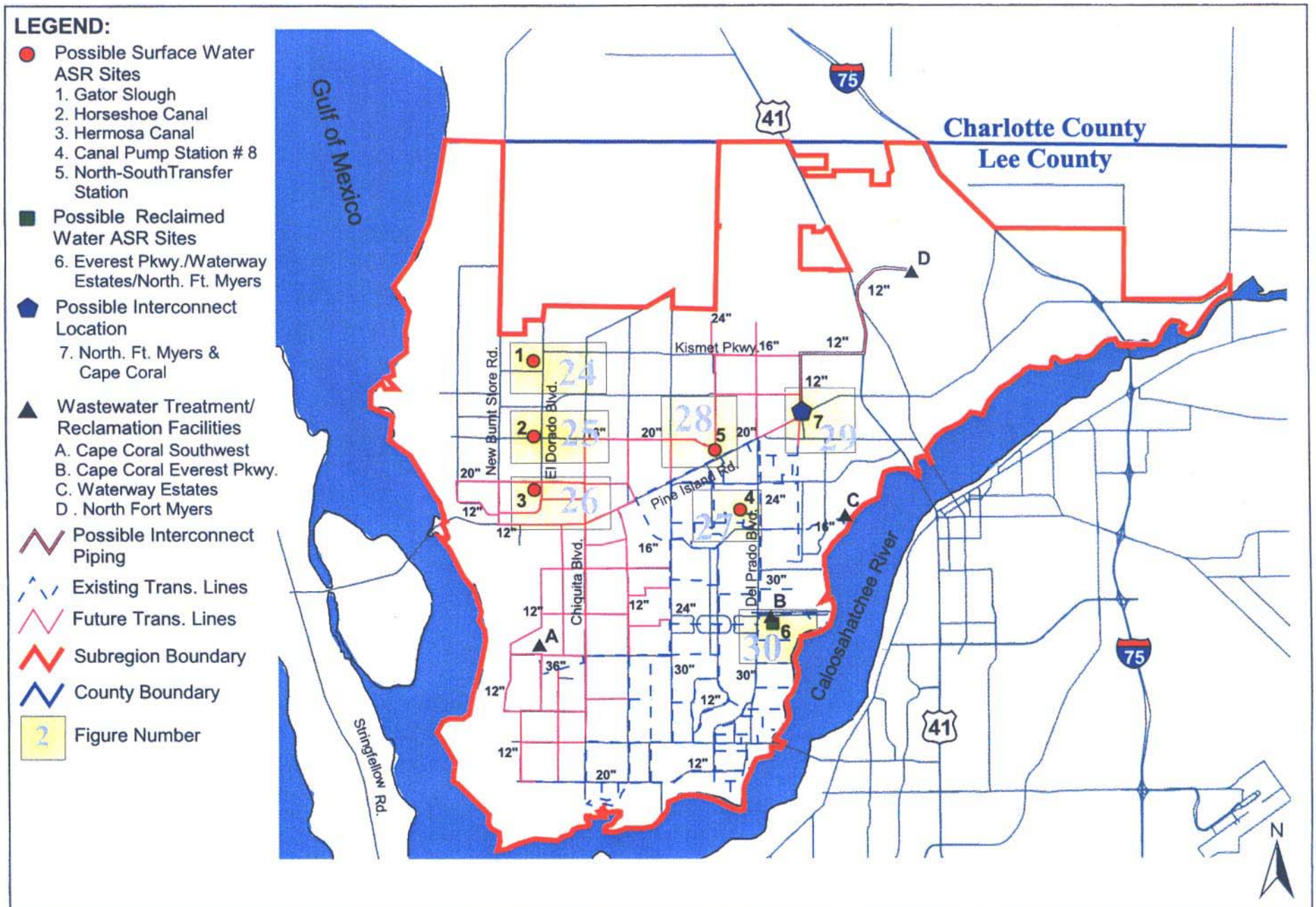
PREFERRED ALTERNATIVE

As presented in TM 2, Table 29 presents the preferred alternative and describes alternative benefit and number of wells needed. The projects include surface water ASR, reclaimed water ASR, interconnects, and using water from mine pits. Table 29 also presents the supply benefit that each project is estimated to provide. Figure 23 presents the ASR system locations and interconnect routes.

Table 29
Sub-regional Alternatives Capacity

Alternatives	Benefit or Recovery Capacity (MGD)
1A. Gator Slough-Intake and Pump Station	14
1B. Gator Slough-Wells (including well piping)	
1C. Gator Slough-Transmission Lines	
2A. Horseshoe Canal-Intake and Pump Station	6
2B. Horseshoe Canal-Wells (including well piping)	
2C. Horseshoe Canal-Transmission Lines	
3A. Hermosa Canal-Intake and Pump Station	6
3B. Hermosa Canal-Wells (including well piping)	
3C. Hermosa Canal-Transmission Lines	
4A. Canal Pumping Station #8-Intake and Pumping Station	5
4B. Canal Pumping Station #8-Intake and Pumping Station	
4C. Canal Pumping Station #8-Transmission Lines	
5A. North-South Transfer Station-Intake and Pump Station	10
5B. North-South Transfer Station-Wells (including well piping)	
5C. North-South Transfer Station-Transmission Lines	
6A. Everest Parkway-Intake and Pump Station	12.2
6B. Everest Parkway-Wells (including well piping)	
6C. Everest Parkway-Transmission Lines	
7. North Ft.Myers & Cape Coral	2.3
Total	**55.5**

(1) Capacity / Benefit based on estimated North Ft. Myers supply for the Year 2020.



Master Plan for the Regional Irrigation Distribution System (RIDS) for the Lower West Coast Region	BOYLE	South Florida Water Management District	ALTERNATIVE PROJECTS INDEX SHEET SUBREGION 2	Figure 23

ALTERNATIVE SELECTION

In order to better allocate funds for the alternative supply projects presented in TM No. 2, the projects have been divided in sub-project base on the type of project, as shown in Table 22 and 29. Each of the projects shown in Table 29 were evaluated to best meet the supply needs of this sub-region and to determine the feasibility of its implementation using the criteria described below:

- Capacity Benefit
- Permittability
- Proximity to Existing Infrastructure
- Unit Cost
- Participation Interest
- Funding Ability
- Consistency with Master Plan

These selection criteria are scored between 1 and 5, with the higher score resulting in a higher priority for implementation. The summary of the scoring is shown on Table 31. The prioritized projects will then be used in the implementation strategy.

Capacity Benefit

This criterion evaluates the amount of supplemental water (benefit) that each project will provide to offset total potable water use for urban irrigation. Table 29 summarizes the benefit per alternative. The benefit is estimated in million of gallons per day. The capacity benefit scoring was based on the range of supply provided as shown below:

From 1 MGD to 3 MGD Score = 1

From 4 MGD to 6 MGD Score = 2

From 7 MGD to 10 MGD Score = 3

From 11 MGD to 14 MGD Score = 4

Greater than 15 MGD Score = 5

Permittability

All of the projects included in the recommended alternative are permittable and there are several precedents for each in the region and throughout the State. Some projects, such as interconnects are much easier to permit than the others, which is reflected in the scoring.

For surface and reclaimed water ASR systems the score is 3 and for interconnects the score is 5 expecting it to be the least difficult to be permitted.

Proximity to Existing Infrastructure

There is an extensive network of existing infrastructure throughout the sub-region that will provide a means of transmission from the new sources of supply to the areas of need. Some projects are closer to the transmission system, making implementation more economical.

Unit Cost

A unit cost was calculated for each of the projects, as shown in Table 30. The unit cost includes the construction of the project, engineering, pilot testing and operation and maintenance (O&M). Currently, the proposed technology for surface water ASR includes bank-filtration, pH adjustment, and chlorine/chloramines disinfection.

Cost Includes:

- Wells: $550,000 per well.
- Pump Station Cost was derived from Pumping Station Design, second Edition, Robert Sanks.
- Intake cost: For capacity equal or less than 5 MGD the cost is $1M. For capacity greater than 5 MGD the cost is $ 100k per MGD.
- Land Acquisition: $100k for site work + $150k for land acquisition. Land estimate is based on a site less than 3 acres.
- Pipes: $4/diameter per lf.
- Engineering = 25% of capital cost +15% contingency
- O & M for Surface ASR= 0.14 cents/1000 gals X10 months X 30 days/month
- O & M Reclaimed ASR or Mine Pits = $1,5000* # wells +$8,000 * Estimated benefit (MGD)

Shown below is the scoring range of the unit cost based on price ranges. The final scoring is presented in Table 30.

From $0.45-$1.00 Score = 5

From $1.01-$1.20 Score = 4

From $1.21-$1.49 Score = 3

From $1.50-$2.00 Score = 2

Greater than $2.00 = 1

Table 30
Project Unit Cost

Project	Cost per 1000 gallons
1A. Gator Slough-Intake and Pump Station	1.27
1B. Gator Slough-Wells (including well piping)	
1C. Gator Slough-Transmission Lines	
2A. Horseshoe Canal-Intake and Pump Station	1.48
2B. Horseshoe Canal-Wells (including well piping)	
2C. Horseshoe Canal-Transmission Lines	
3A. Hermosa Canal-Intake and Pump Station	1.56
3B. Hermosa Canal-Wells (including well piping)	
3C. Hermosa Canal-Transmission Lines	
4A. Canal Pumping Station #8-Intake and Pumping Station	1.49
4B. Canal Pumping Station #8-Intake and Pumping Station	
4C. Canal Pumping Station #8-Transmission Lines	
5A. North-South Transfer Station-Intake and Pump Station	1.27
5B. North-South Transfer Station-Wells (including well piping)	
5C. North-South Transfer Station-Transmission Lines	
6A. Everest Parkway-Intake and Pump Station	1.20
6B. Everest Parkway-Wells (including well piping)	
6C. Everest Parkway-Transmission Lines	
7. North Ft.Myers & Cape Coral	0.85

Participation Interest

Some of the stakeholders in the RIDS have expressed more interest and participated more extensively than others. As this is primarily a voluntary program for the stakeholders, their anticipated participation is scored accordingly.

Funding Ability

The projects included in the preferred alternative are fundable through SRF loans and should be eligible for a number of state and federal grants. Funding has been directed towards projects with regional benefits and those that offset potable use and groundwater pumpage, i.e., alternative sources of supply. The availability of state and federal grant programs has been based on legislative and congressional approval; therefore, a funding strategy based on the latest programs will be provided for the preferred alternative in the final report.

Consistency with Master Plan

The stakeholders have developed or are developing master plans to improve and expand their individual system. The development of the RIDS has integrated the plans of the stakeholders. Therefore, this criterion evaluates how each of the projects could be integrated to the improvements planned.

Table 31
Project and Criteria Evaluation

Supply Projects	Capacity Benefit	Permit-ability	Proximity to Existing Infrastructure	Unit Cost	Participation Interest	Funding Ability	Consistency with Master Plans	Total Points	Rank
1A. Gator Slough-Intake and Pump Station	5	3	3	3	5	5	5	29	5
1B. Gator Slough-Wells (including piping)	5	3	3	3	5	5	5	29	5
1C. Gator Slough-Transmission Lines	5	5	3	3	5	5	5	31	3
2A. Horseshoe Canal-Intake and Pump Station	3	3	3	3	5	5	5	27	7
2B. Horseshoe Canal-Wells (including piping)	3	3	3	3	5	5	5	27	7
2C. Horseshoe Canal-Transmission Lines	3	5	3	3	5	5	5	29	5
3A. Hermosa Canal-Intake and Pump Station	3	3	5	2	5	5	5	28	6
3B. Hermosa Canal-Wells (including piping)	3	3	5	2	5	5	5	28	6
3C. Hermosa Canal-Transmission Lines	3	5	5	2	5	5	5	30	4
4A. Canal Pumping Station #8-Intake and Pumping Station	2	3	5	3	5	5	5	28	6
4B. Canal Pumping Station #8-Intake and Pumping Station	2	3	5	3	5	5	5	28	6
4C. Canal Pumping Station #8-Transmission Lines	2	5	5	3	5	5	5	30	4
5A. North-South Transfer Station-Intake and Pump Station	4	3	5	3	5	5	5	30	4
5B. North-South Transfer Station-Wells (including piping)	4	3	5	3	5	5	5	30	4
5C. North-South Transfer Station-Transmission Lines	4	5	5	3	5	5	5	32	2
6A. Everest Parkway-Intake and Pump Station	5	3	4	4	5	5	5	31	3
6B. Everest Parkway-Wells (including piping)	5	3	4	4	5	5	5	31	3
6C. Everest Parkway-Transmission Lines	5	5	4	4	5	5	5	33	1
7. North Ft. Myers & Cape Coral Interconnect	1	5	5	5	3	5	3	27	7
8. Limerock /Jay Rock/Babcock	2	2	1	1	1	4	1	12	8