

Table 2.1  
Shiprock Irrigation Projects Reported Acreage

Reference	Hogback	Fruitland and Cambridge	Cudei	Total
BIA Fryer Report (1939)				
Irrigated	2,213	714	545	3,472
Under Constructed Works	3,064	1,150	600	4,814
Irrigable Land Under the Project	5,425	3,675	800	9,900
BIA Crop Reports (1939 - 1959)				
Average Net Area Irrigated	4,376	1,886	268	6,530
Average Idle Acreage	1,110	501	94	1,705
BIA Krug Report (1948)				
Irrigated	3,112	2,227	267	5,608
Under Ditch	4,832	3,575	600	9,007
Ultimately Irrigable	11,500	3,975	800	16,275
BIA Completion Plan (1962)				
Irrigable Land	9,614	n/a	n/a	n/a
1965 Type 1 Survey of Water Uses				
Irrigated Land	5,200	3,300	400	8,900
San Juan County (1975)				
Irrigated	7,960	2,080		10,040
Fallow	1,020	1,740		2,760
Total	8,980	3,820		12,000

Table 2.1 (Continued)  
Shiprock Irrigation Projects Reported Acreage

Reference	Hogback	Fruitland and Cambridge	Cudei	Total
USDA SCS Inventory (1986)				
Farmed	4,500	3,375	370	8,242
Project Acreage	6,460	3,835	670	10,965
Reclamation Design Proposal (1989)				
Crop Land	7,795	3,165	569	12,129
Total Acres	8,869	3,718	670	13,725
BIA Crop Utilization Data (1993)				
Irrigated	2,545	2,380	244	5,169
Idle	3,453	828	340	4,621
Irrigable Acreage	8,286	3,335	543	12,164
Assessed Acreage	8,563	3,548	616	12,727
Total Project Acreage	9,223	3,830	627	13,680
ISC Acreage Inventory (1994)				
Irrigated	3,061	2,327	333	5,721
Total Acreage	6,331	3,366	609	10,306
ISC Acreage Inventory (2000)				
Irrigated	2,834	2,138	313	5,285
Total Acreage	5,769	3,318	613	9,700

2.4 AF/Ac  
dep.

365 177

Table 4.9  
Upper and Lower Range of Overall Irrigation Efficiency and Diversion Requirements

On-Farm Efficiency	Conveyance Efficiency			
	Low = 40%	Med. = 50%	High = 60%	Very High = 75%
Low = 40%	16%	20%	24%	30%
Medium = 60%	24%	30%	36%	45%
High = 75%	30%	37%	45%	56%
	gpm/ac	gpm/ac	gpm/ac	gpm/ac
Low = 40%	33.1	26.5	22.1	17.7
Medium = 60%	22.1	17.7	14.7	11.8
High = 75%	17.7	14.1	11.8	9.4
	cfs/ac	cfs/ac	cfs/ac	cfs/ac
Low = 40%	0.074	0.059	0.049	0.039
Medium = 60%	0.049	0.039	0.033 <sup>100/30 ac</sup>	0.026
High = 75%	0.039	0.031	0.026	0.021

#### 4.4 Water Supply versus Water Demand

To determine if the canal reaches have adequate capacity, the peak water demands were determined. The peak water diversion requirements for the Shiprock irrigation projects depend on the number of irrigated or irrigable acres, the crop irrigation requirement, and the overall irrigation efficiency. Unfortunately, precise crop records and water measurements are not available for the Shiprock irrigation systems. Consequently, assumptions have been made to bound the upper and lower limits of the water demands. These assumptions and the resulting values are presented in the following sections.

Handwritten notes in a box:

1.00 = 40 AF

2.25 = 40 AF

1.00 = 40 AF

1.00 = 40 AF

Handwritten calculation:

$$\begin{array}{r} 12000 \\ .031 \\ \hline 36000 \\ 36000 \\ \hline 39600 \end{array}$$