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ARIZONA WATER COMPANY



Docket No. W-1445A-02-0619

2002 RATE HEARING EXHIBIT NO. _____

For Test Year Ending 12/31/01

**PREPARED
REJOINDER TESTIMONY & EXHIBITS
OF
Ralph J. Kennedy**

EXHIBIT
A-17
Submitted

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8
9 **BEFORE THE ARIZONA CORPORATION COMMISSION**

10
11 IN THE MATTER OF THE
APPLICATION OF ARIZONA WATER
12 COMPANY, AN ARIZONA
CORPORATION, FOR ADJUSTMENTS
13 TO ITS RATES AND CHARGES FOR
UTILITY SERVICE FURNISHED BY
14 ITS EASTERN GROUP AND FOR
CERTAIN RELATED APPROVALS.

Docket No. W-01445A-02-0619

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22 **REBUTTAL TESTIMONY OF RALPH J. KENNEDY**

1 Q. **WHAT IS YOUR NAME, EMPLOYER AND OCCUPATION?**

2 A. My name is Ralph J. Kennedy. I am employed by Arizona Water Company as
3 Vice President and Treasurer.

4 Q. **ARE YOU THE SAME RALPH J. KENNEDY WHO PREVIOUSLY FILED
5 DIRECT AND REBUTTAL TESTIMONY IN THIS PROCEEDING?**

6 A. Yes, I am.

7 Q. **WHAT IS THE PURPOSE OF YOUR REJOINDER TESTIMONY?**

8 The purpose of my testimony is to respond to the surrebuttal testimony of Staff
9 and RUCO regarding rate design, consolidation of the Apache Junction and
10 Superior systems, the weighted cost of capital, the elimination of the meter
11 charge component of the NP-260 tariff and the benefits obtained by the PCG
12 settlement for the Miami customers.

13 I. **Rate Design**

14 Q. **MR. THORNTON HAS REFRAMED THE STATEMENT ON PAGE 9 OF YOUR
15 REBUTTAL TESTIMONY. DOES MR. THORNTON ACCURATELY PORTRAY
16 YOUR TESTIMONY?**

17 A. No he does not. My actual testimony was: "My overall conclusion regarding
18 Staff's rate design recommendations is that it is inadequately developed and
19 lacks both depth and breadth of quantitative support." My statement specifically
20 criticizes Staff's rate design recommendations, not neoclassical economics,
21 marginal cost theory, or other complete, well-designed and documented
22 analyses. Mr. Thornton's alleged marginal cost study, as reproduced on page 1
23 of Exhibit RJK-RJ1, is nothing more than a one-half page "work paper". The
24 study is not well-designed or well-documented and does not support Staff's rate
25 design for the Apache Junction system on which it was supposedly based.
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1 Attempting to then apply the same flawed study to the remaining seven Eastern
2 Group systems is likewise unsupportable.

3 **Q. WHY ISN'T MR. THORNTON'S WORK PAPER EVEN ADEQUATE TO**
4 **SUPPORT STAFF'S APACHE JUNCTION RATE DESIGN?**

5 **A.** Staff's rate design is based on an imaginary cost of service study (COSS) with
6 assumed results. In footnote 6 on page 9 of Mr. Thornton's Direct Testimony he
7 describes the system benchmark rate as follows.

8 *The system benchmark rate is derived by multiplying .75*
9 *times the revenue requirement and dividing the result by the*
10 *test year gallonage. The system benchmark rate is an*
11 *approximation of the average cost per 1,000 gallons if the*
12 *rates were based on a cost-of-service study approach (and*
13 *ignoring existing rates) that assumes that the customer*
14 *charges make up 25 percent of costs and that 75 percent of*
15 *costs are attributable to developing, treating and delivering*
16 *the commodity.*

17 In other words, Staff's benchmark rate ignores the existing rates, which
18 were based on an actual COSS, in favor of a fictitious study that would produce
19 total commodity costs equal to 75 percent of the revenue requirement. This
20 assumption leads to the resulting benchmark rate of \$3.09 and the 20% premium
21 (shown as "Ratio 1.21") over the \$3.74 Average Incremental Cost (AIC) calculated
22 on MR. Thornton's worksheet. Had Staff used the existing Apache Junction
23 commodity rate of \$2.569 and compared that to the calculated AIC it would have
24 produced a 46% premium ($\$3.74 / \$2.569 = 1.46$). The current commodity cost
25 unlike Staff's has the advantage of being based on a cost of service study
26 accepted by the Commission. The second page of Exhibit RJK-RJ1 shows that by
27 changing Staff's assumption that 75% of the revenue requirement is being
28 recovered through the commodity charge a wide range of tier premiums could be
advocated. What is the correct percentage to use for Apache Junction?

Any tier premium ratio calculated on this worksheet would be
inappropriate for Apache Junction, however, because Staff's \$3.74 AIC
calculation is not based on the cost of actual capacity additions. Instead, Staff's

1 calculation originated from Staff engineering estimates. See Staff Response to
2 Company Data Request 7.4. Moreover, these estimates cannot be verified or
3 tested because Staff was not able to produce them in response to data requests.
4 See Staff Response to Company Data Request 7.5(b) ("the engineering estimates
5 cannot be found in Staff's files. [Engineering] Data that were received or
6 calculated were transferred to the Excel spreadsheet and likely discarded.")

7 These Staff Responses are reproduced on Exhibit RJK-RJ2.

8 **Q DOES STAFF'S BENCHMARK RATE ASSUMPTION MAKE SENSE FOR THE**
9 **OTHER SEVEN EASTERN GROUP SYSTEMS?**

10 A. Certainly not. Staff's benchmark rate ignores the differing characteristics of each
11 system including differences in water availability, pumping cost, well productivity,
12 population density, investment per customer and water demand. Using a single
13 assumed commodity percentage of 75 percent in the face of accurate cost-based
14 percentages makes no sense. The actual comparable percentages based on
15 unadjusted test year revenue are shown on Exhibit RJK-RJ3. They vary from a
16 low of 38.9 percent for San Manuel to a high of 66.2 percent for Apache Junction.
17 I cannot stress enough that Staff's 75 percent assumption is inappropriate for any
18 single Eastern Group System, much less all of them.

19 **Q. DO YOU WISH TO COMMENT ON MR. THORNTON'S TESTIMONY THAT**
20 **STAFF DID NOT INTEND TO PRODUCE SUBSIDIES BETWEEN METER**
21 **SIZES?**

22 A. It is the results of Staff's proposed rate design, not Staff's intentions that are
23 significant. Staff may not have intended to produce subsidies between meter
24 sizes but the fact is their recommended three tier rate design does just that in
25 each of the Eastern Group systems as the charts included as Exhibit RJK-RJ4
26 clearly show. The percent of use by each meter size that is priced at the highest
27 tier three rate is directly related to meter size This unintended consequence of
28 Staff's experimental rate design was discovered early in the process leaving me

1 to wonder how many other unintended consequences the Company and its
2 30,000 Eastern Group customers will suffer if this untested approach to rate
3 making goes into effect.

4 **Q. WHAT RATE DESIGN SHOULD BE ADOPTED IN THIS PROCEEDING?**

5 A. The evidence supporting the Company's proposed rate design shows that it is
6 logical and cost of service based. It is also fair and easily understood by
7 customers and regulators alike. It is a tested design that will not increase the risk
8 of revenue instability. The Company's proposed rate design is exactly the same
9 rate design adopted in the recently concluded Northern Group Phase I rate case.
10 (See Decision No. 64282, December 28, 2001). Therefore, the Company's
11 proposed rate design should be adopted by the Commission in this proceeding.

12 **II. Apache Junction and Superior System Consolidation**

13 **Q. HAS STAFF OR RUCO MODIFIED THEIR OPPOSITION TO THE COMPANY'S**
14 **PROPOSAL TO CONSOLIDATE THE APACHE JUNCTION AND SUPERIOR**
15 **SYSTEMS?**

16 A. No, both continue to oppose consolidation. Staff was silent on the issue in their
17 surrebuttal. RUCO witness Rigsby testified that consolidation may be warranted
18 after the systems share a common cost of service. Surrebuttal Testimony of
19 William Rigsby at 21-22. In other words, both Staff and RUCO ignore the
20 potential benefits of consolidation and instead focus on their assumption that the
21 systems must first be interconnected. The Company, based on its experience
22 with prior Commission decisions allowing rate consolidation of non-
23 interconnected Company systems such as River Valley and Rimrock, Arizona
24 City and Casa Grande, Forest Towne and Overgaard, Valley Vista and Sedona.
25 Tierra Grande and Casa Grande among others disagrees. Certainly, a
26 reasonable evaluation and conclusion on rate consolidation would consider more
27 than one factor.
28

1 Q. WHY SHOULD THE APACHE JUNCTION AND SUPERIOR SYSTEMS BE
2 CONSOLIDATED AT THIS TIME?

3 A. There are several compelling reasons to consolidate these two systems in this
4 rate case.

- 5 • Superior's existing rates are among the highest in the Company because
6 the town's water must be pumped uphill from wells located 23 miles
7 away.
- 8 • Superior is an economically depressed area while the nearby Apache
9 Junction area is fast growing with better economic conditions. The
10 Community Profiles prepared by the Arizona Department of Commerce
11 for Apache Junction and Superior reproduced as Exhibit RJK-RJ5
12 provide data and a narrative description on both areas. The following
13 table summarizes information from the 2002 data illustrating Superior's
14 small population and relatively depressed economy:

	Apache Junction	Superior
Population	33,570	3,280
Unemployment Rate	5.3%	8.5%
Taxable Sales Per Capita	\$10,800	\$2,622
Assessed Valuation Per Capita	\$5,251	\$1,620

- 20 • Superior's **existing** rates are significantly greater than Apache Junction's.
 - 21 ○ The 5/8" minimums are \$18.13 and \$12.43, respectively.
22 Superior's minimum is 146% of Apache Junction's.
 - 23 ○ The commodity costs per MGallon are \$4.060 and \$2.569
24 respectively. Superior's commodity cost is 158% of Apache
25 Junction's .
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- If the first step of a rate consolidation plan is not taken now the system specific rates that RUCO and Staff recommend will further widen the existing rate gap making future consolidation more difficult.
- Apache Junction and Superior have water that will require arsenic treatment. Without rate consolidation at this time, the already high cost of water in Superior will become disproportionately higher due to the substantial arsenic costs that will have to be spread over Superior's comparatively small customer base.
 - On a stand-alone basis Apache Junction's arsenic treatment facilities will cost \$573 per customer while Superior's will cost \$1,309.
 - With consolidation the arsenic treatment facilities for Apache Junction and Superior spread across the larger customer base will be \$630 per customer.
- These systems will be interconnected in the near future as Mr. Whitehead has testified. Direct Testimony of Michael J. Whitehead at 10. A new CCN filling in the open area between the Apache Junction and Apache Junction-Florence Junction CCN was approved by the Commission on September 10, 2003. (Decision No. pending) The Company now has a connected set of CCN's extending from Apache Junction to Superior as illustrated on the map of this area. Direct Testimony of Michael J. Whitehead, Exhibit 1.

Q. HOW WOULD THE COMPANY'S TWO-STEP RATE CONSOLIDATION PROPOSAL IMPACT RATES FOR APACHE JUNCTION AND SUPERIOR CUSTOMERS?

A. On the stand alone basis, recommended by RUCO and Staff, Apache Junction's revenues would have to increase 16.7% and Superior's would have to increase 71.4%, without even considering arsenic treatment costs. Under the Company's

1 two-step consolidation proposal, Apache Junction's revenues would increase
2 22.2% and Superior's would increase 8.9%.

3 The effect of these alternative rate determination methods on customers
4 with 5/8" meters is illustrated on Exhibit RJK-RJ6, a typical bill analysis. Line 20
5 shows the effect on the average residential bill using both stand alone system
6 rates and the Company's proposed consolidated rates. The dollar increase in the
7 average customer's bill under stand-alone rates, as shown on line 21, is \$5.89 for
8 Apache Junction and \$30.24 for Superior. Adopting consolidated rates results in
9 a \$7.84 increase for the Apache Junction customers and a \$4.06 increase for
10 Superior customers. Since the first-step of the Company's two-step consolidation
11 proposal establishes only a common minimum, Superior customers will continue
12 to pay more for their water under the Company's proposed consolidated rates
13 because of Superior's higher commodity cost.

- 14 • Superior customers would pay \$46.55 for 7,000 gallons while Apache
15 Junction customers would pay \$35.81.
- 16 • Superior customers would pay \$58.73 for 10,000 gallons while Apache
17 Junction customers would pay \$43.38.

18 Each systems unique commodity costs will be retained until the next rate case, at
19 which time the second step will establish a common commodity charge.

20 **III. Weighted Cost Of Capital**

21 **Q. DO YOU AGREE WITH THE WEIGHTED COST OF CAPITAL
22 RECOMMENDED BY RUCO OR STAFF?**

23 **A.** No, I do not.

24 **Q. DO YOU BELIEVE THAT STAFF'S AND RUCO'S PROPOSED FOUR
25 PERCENT COST OF SHORT-TERM DEBT SHOULD BE ADOPTED?**

26 **A.** No. The cost of short-term debt has been very volatile over the past several
27 years as Exhibit RJK-RJ7 illustrates. The Company's short-term borrowing rate
28 is not fixed but floats with the level of short-term market rates. During the 2001

1 test year, the prime rate was 9.5% for more than 6 months. By the end of the
 2 following year, the prime rate had dropped to 4.75%, a 50% decrease in one year
 3 as shown on the right chart axis. Given the extremely volatile nature of short-
 4 term rates since 2001, I recommend that the cost of short-term debt in this case
 5 be a 24-month average rather than a value at a particular point in time. I further
 6 recommend the 24-month average from January 2001 through December 2003,
 7 which is 5.798% before the 25 basis point reduction provided in our bank loan
 8 agreement. This results in a short-term rate of 5.548%.

9 **Q. WHAT OVERALL WEIGHTED COST OF CAPITAL DO YOU RECOMMEND?**

10 A. I recommend an overall weighted cost of 10.9% as shown in the following table.

	<u>Amount</u>	<u>Percent</u>	<u>Cost Rate</u>	<u>Composite Cost</u>
Short-Term Debt (a)	\$4,500,000	5.62%	5.54%	0.31%
Long-Term Debt (a)	22,600,000	28.24%	8.46%	2.39%
Common Stock Equity (c)	52,916,454	66.14%	12.40%	8.20%
Total	<u>\$80,016,454</u>	<u>100.00%</u>		<u>10.90%</u>

18 **IV. Meter Charge Component Of The NP-260 Tariff**

19 **Q. MR. HAMMON HAS PROPOSED THAT THE METER CHARGE COMPONENT
 20 OF THE NON-POTABLE NP-260 TARIFF BE ELIMINATED. DO YOU AGREE?**

21 A. No. I disagree with this recommendation for three reasons. First, I believe that
 22 the meter charge provides a small margin of safety to ensure that the costs of
 23 serving the NP-260 customers are fully recovered from rates. They should not
 24 receive any subsidy from the General Service customers. In fact, I believe it
 25 would be equitable for the NP-260 customers to provide a small contribution to
 26 the Company's operating income through the existing meter charge, offsetting
 27 the amount that the General Service customers must pay. Second, none of the
 28 NP-260 customers have complained about including a meter charge in their rate.

1 Finally the actual and adjusted operating revenue amounts adopted by all parties
2 in this proceeding include all of the NP-260 meter revenue that Mr. Hammon
3 proposes to eliminate. Accepting his recommendation at this time would require
4 an offsetting increase to the General Service rates. For these reasons, I
5 recommend that the NP-260 language requiring a meter charge be maintained.

6 **V. Benefits Obtained By The PCG Settlement For Miami Customers.**

7 **Q. BOTH RUCO AND STAFF CLAIM THAT THE COMPANY HAS FAILED TO**
8 **ADEQUATELY IDENTIFY AND QUANTIFY THE BENEFITS OF THE PCG**
9 **SETTLEMENT TO CUSTOMERS. DO YOU AGREE?**

10 **A.** No. Staff and RUCO's objection reflects either a dogged determination to
11 penalize the Company for its settlement with the PCG or a complete failure to
12 understand the concept of avoided costs and present value discounting, or both.
13 As a result of the PCG Settlement, the Company received a guaranteed water
14 supply for its Miami customers of 100 gallons per minute (GPM) beginning in
15 1998 and increasing by 100 GPM annually until it reaches 600 GPM in October
16 2003. From 2003 until October 2028, the PCG guarantees a continuing supply of
17 600 GPM, allowing the Company to ensure reliable water service to the Miami
18 customers. To obtain this guaranteed water supply without the PCG settlement,
19 the Company would have had to drill and equip a minimum of 10 additional wells.
20 The Miami customers would have been responsible for the operation and
21 maintenance expenses incurred to operate these additional wells, depreciation
22 expense on these wells, property taxes and a net return and income taxes on the
23 net return. All of this was testified to by Mr. Garfield and myself. See Rebuttal
24 Testimony of William Garfield at 11-12; Rebuttal Testimony of Ralph J. Kennedy
25 at 4-7.

26 **Q. CAN THESE BENEFITS TO CUSTOMERS BE QUANTIFIED?**

1 A. Yes. On page 5 of my rebuttal testimony I presented a summary of present
 2 value calculation to compare the PCG benefits received by the Miami customers,
 3 in the form of reduced revenue requirement, with the benefits received by the
 4 Company.

5 **Partial Customer Benefits Over 30 Year Life Of PCG Agreement**

Discount Rate	Partial Customer Benefits Over 30 Year Life Of PCG Agreement					Company Benefit	
	Depreciation Expense	Required Return	Gross Return	Minimum Minimum	Power Savings	Amount	Percentage
(a)	(b)	(c)	(d)	(e) (b)+(d)	(f)	(g)	(h) (g)/(e)
None	5,000,000	7,600,000	12,359,587	17,359,587	7,449,000	1,400,032	7.5%
6.0%	\$1,858,063	\$3,760,531	\$6,115,606	7,973,669	\$2,297,377	1,247,431	13.5%
8.0%	\$1,432,261	\$3,105,776	\$5,050,804	6,483,065	\$1,663,445	1,202,669	15.6%
8.6%	\$1,332,135	\$2,942,565	\$4,785,379	6,117,514	\$1,518,343	1,189,766	16.3%
9.5%	\$1,200,239	\$2,721,039	\$4,425,120	5,625,359	\$1,329,958	1,170,845	17.2%
10.0%	\$1,135,174	\$2,608,741	\$4,242,496	5,377,669	\$1,238,296	1,160,553	17.8%

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The benefits to Miami customers summarized in the above table will be realized over the life of the agreement. The benefits to the Company were received over the period 1998 through 2000. Therefore, a present value analysis is required to properly compare financial costs or benefits that occur in different time periods. The discounted costs are shown at their present value in 1998, the year the PCG Agreement was completed.

The table also shows that the minimum cost of the wells the Company would have had to construct, absent the PCG Settlement, consisting of just depreciation and the gross return, would total \$17,359,587 over the life of the original wells. Depending on the discount rate used, this total minimum cost would have a present value in 1998 of between \$7,973,669 and \$5,377,669. This is the 1998 present value of the minimum cost that would have to be recovered from the Miami customers to pay for a 600 GPM water supply.

Q. **HOW DOES THIS COMPARE TO THE BENEFITS REALIZED BY THE COMPANY?**

1 A. Since the settlement agreement provided that the \$1.4 million payment to the
2 Company would be made in three installments, the comparable present value in
3 1998 would have been between \$1,247,406 and \$1,160, 531 using the same
4 discount rates from 6% to 10%. Comparing the total minimum customer benefit
5 of \$17,359,587 to the \$1.4 million benefit realized by AWC, without discounting,
6 shows that the Company realized less than 10% (about 7.5%) of the minimum
7 customer benefit. This percentage increases as the discount rate is increased
8 because the Company benefit was received over the first three years of the
9 period while the customers receive their benefits over the entire period. Present
10 value discounting enables these two different cash flow streams to be directly
11 compared in terms of present values.

12 In sum, because of the PCG Settlement the Company negotiated, Miami
13 customers will receive a 600 GPM water supply without having to pay the above
14 costs in their rates over the life of the agreement. This is the avoided cost benefit
15 for the Miami customers to be realized over the life of the agreement, and no
16 further adjustment, as RUCO and Staff mistakenly suggest, is justified or
17 necessary for the Miami customers to receive these benefits.

18 **Q. DOES THIS CONCLUDE YOUR REJOINDER TESTIMONY?**

19 A. Yes, however, my silence on any point or recommendation made by RUCO or
20 Staff in their surrebuttal testimony should not be regarded as the Company's
21 acceptance of such point or recommendation.

22
23 1459656.1/12001.187

EXHIBITS

ARIZONA WATER COMPANY

Index of Rejoinder Exhibits

- RJK-RJ1 Staff's AIC Worksheet Supporting 20% Marginal Cost Premium
- RJK-RJ2 Staff Data Responses 7.3 and 7.5
- RJK-RJ3 Chart Of Existing Commodity Revenue As A Percent Of Total Revenue
- RJK-RJ4 Charts Of Tier 3 Use By Meter Size
- RJK-RJ5 Apache Junction and Superior Community Profiles
- RJK-RJ6 Bill Analysis Showing Effect of Apache Junction and Superior Consolidation
- RJK-RJ7 Chart of Prime Rate And percentage Change From Prior 12 Months

interest rate 9%
project life 40

9038642 RR
2190849.9 Gallons
15502 Customers

0.75

Capital Requirements

Well \$ 750,000 315,360.00
Tank \$ 500,000
Mains \$ 1,584,000 0.625222222
Treatment \$ 2,834,000

Commodity Monthly
6778981.5 2259661
3.0942245 12.14714

Ratio: 1.21

Annualized \$ 263,448

Incremental customers 1,324
Sales 1,000 gals/customer/yr. 148.92
Incremental annual gals sold (000s) 197,170
Annualized capital/1,000 gals sold 1.33614356

O&M/1000

Treatment/1,000 gals. \$ 1.91
Total AIC/1,000 gals.: \$ 0.50
\$ 3.74

interest rate
project life

9%
40

9038642 RR
2190849.9 Gallons
15502 Customers

Changing this 75%
assumption allows a
wide range of
premiums

0.75

Capital Requirements

Well \$ 750,000
Tank \$ 500,000
Mains \$ 1,584,000
Treatment \$ 2,834,000
Annualized \$ 263,448

Commodity Monthly
6778981.5 2259660.5
3.0942245 12.147145

Ratio: 1.21

315,360.00
0.625222222

Incremental customers 1,324
Sales 1,000 gals/customer/yr. 148.92
Incremental annual gals sold (000s) 197,170
Annualized capital/1,000 gals sold 1.33614356

Assume	Resulting Commodity	Tier Premium (Ratio)
0.40	1.65	2.27
0.45	1.86	2.02
0.50	2.06	1.81
0.55	2.27	1.65
0.60	2.48	1.51
0.65	2.68	1.40
0.70	2.89	1.30
0.75	3.09	1.21
0.80	3.30	1.13

What one assumption
should be used that
works for all 8 E.G.
systems?

\$ 1.91
\$ 0.50
\$ 3.74

O&M/1000
Treatment/1,000 gals.
Total AIC/1,000 gals.:

Staff's Assumption

STAFF'S RESPONSES TO
ARIZONA WATER COMPANY'S
SEVENTH SET OF DATA REQUESTS
ACC DOCKET NO. W-01445A-02-0619

September 2, 2003

- 7.3 State where each amount shown on Exhibit A is found in the pre-filed testimony and schedules of the parties or, if such amount is not found in the pre-filed testimony and schedules, explain the basis for such amount so that it can be checked and verified.

Response by John Thornton:

The amounts \$3.74 and \$3.09 are found on page 9 of Mr. Thornton's testimony and the method is generally described in the footnote on page 9.

- 7.4 Provide copies of all work papers showing how the amounts shown on Exhibit A were calculated or otherwise determined so that these amounts can be checked and verified.

Response by John Thornton:

The amounts in Exhibit A originated from engineering estimates with the exceptions of the embedded revenue requirement, commodity allocation factor, and Apache Junction bill counts and actual gallons sold.

- 7.5 Attached to this set of data requests is an additional document, which is titled "Memorandum" and dated March 18, 2003, from John Thornton to Del Smith. With respect to that Memorandum, provide the following data and information:
- (a) Explain what each of the 15 symbols found in the text of the Memorandum means, and explain how they were to be used in developing Staffs proposed inverted block rates.
 - (b) Provide copies of all information submitted by the Engineering Section to Mr. Thornton (or to anyone else in the Financial & Regulatory Analysis Section) in response to the Memorandum.
 - (c) Provide all work papers and other documents showing the development and calculation of any of the information and data submitted by the Engineering Section to Mr. Thornton (or anyone in the Financial & Regulatory Analysis Section) in response to the Memorandum.
 - (d) Explain how the information and data obtained or developed in response to the Memorandum was used in connection with Mr. Thornton's incremental cost study.
 - (e) Explain how the information and data obtained or developed in response to the Memorandum was used in developing Staffs recommended rate design for each of the Company's Eastern Group systems.

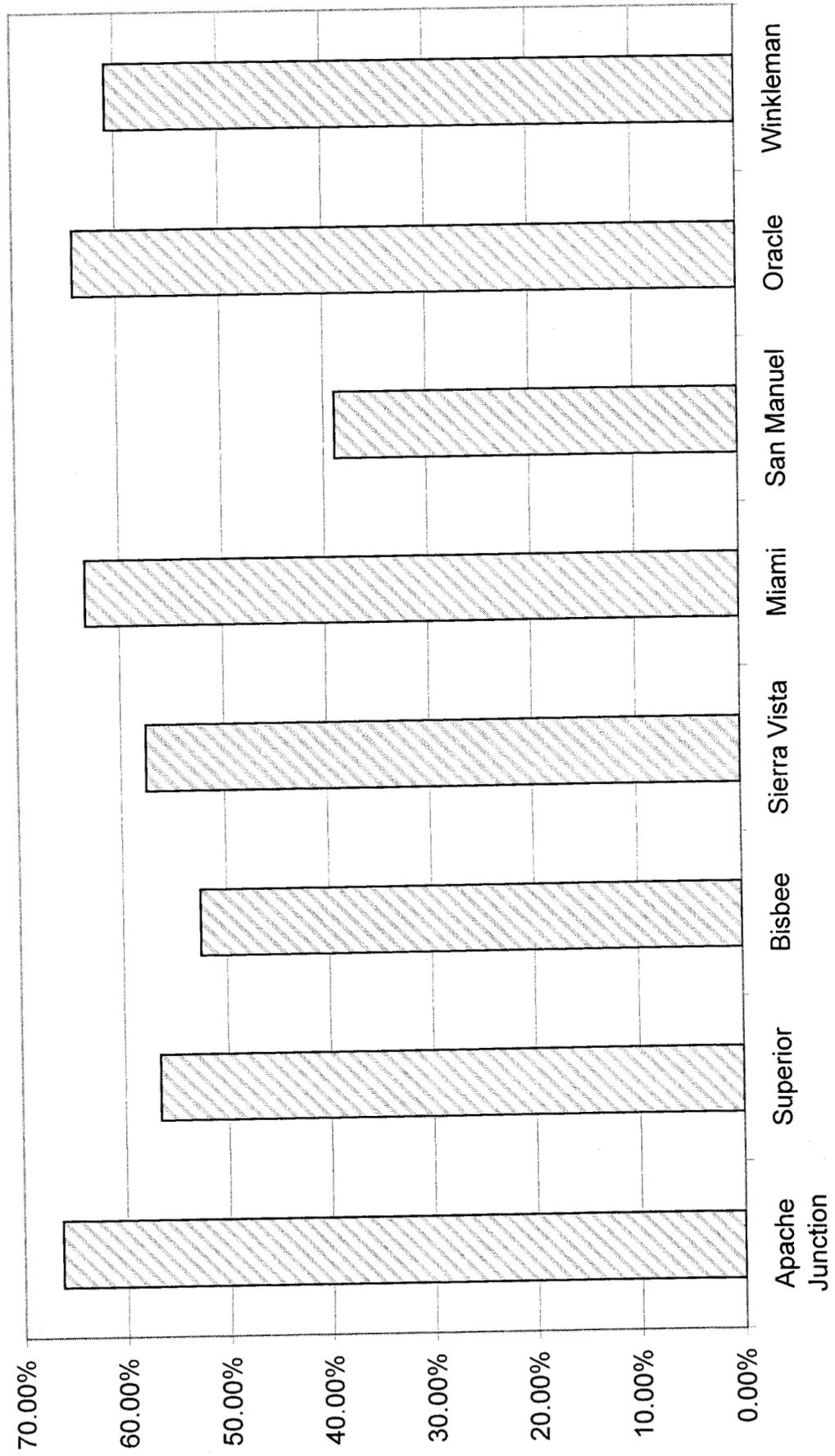
**STAFF'S RESPONSES TO
ARIZONA WATER COMPANY'S
SEVENTH SET OF DATA REQUESTS
ACC DOCKET NO. W-01445A-02-0619**

September 2, 2003

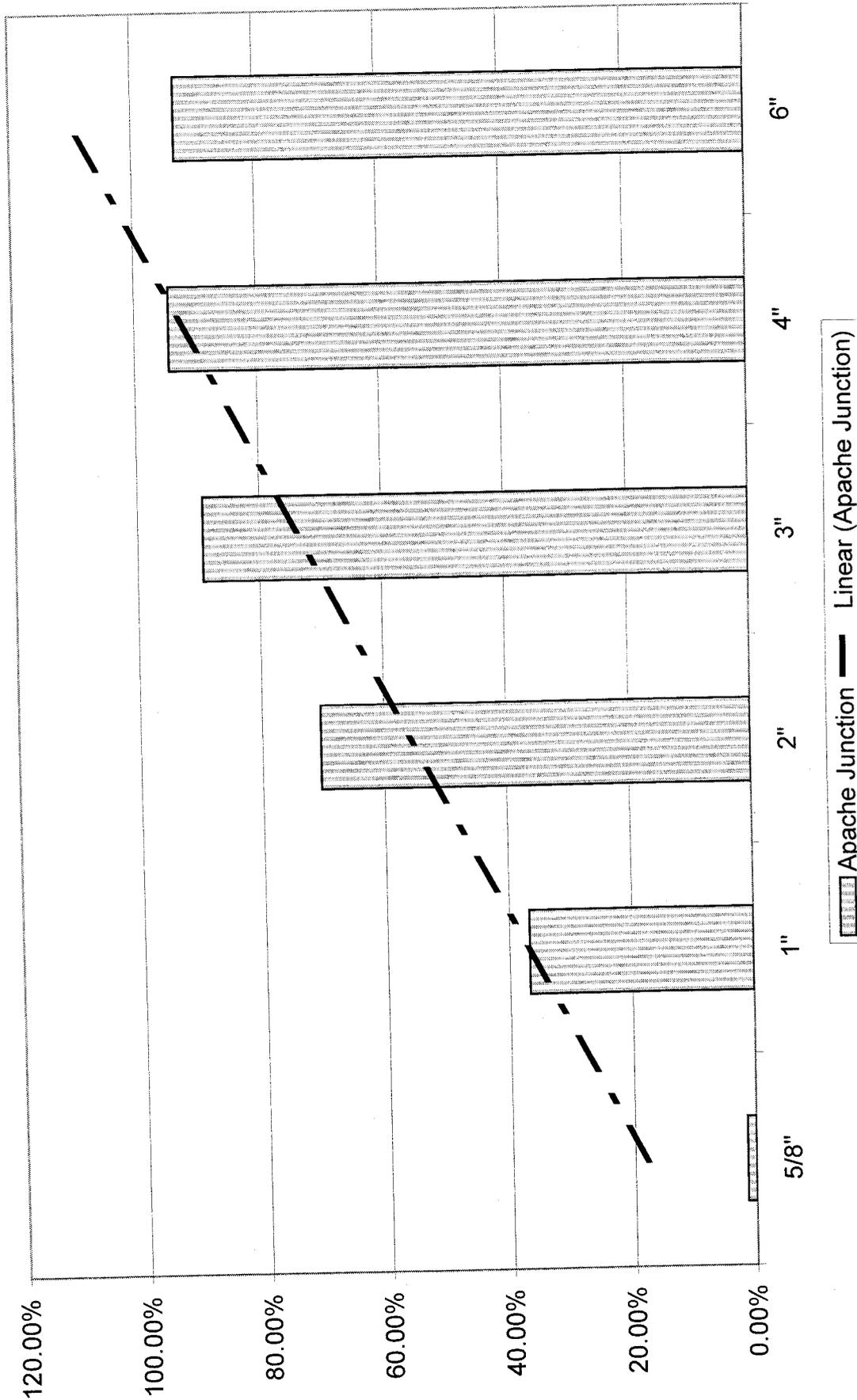
Response by John Thornton:

- (a) See *Cost Allocation and Rate Design for Water Utilities* by the NRRI, supplied in the working papers, beginning on page 63.
- (b) Staff cannot find any such information in its files. Data that were received or calculated were transferred to the Excel spreadsheet and likely discarded.
- (c) See Staff response to AWC Data Request No. 7.5(b), above.
- (d) See response to AWC Data Request No. 7.2, above.
- (e) See response to AWC Data Request No. 7.2, above, and Mr. Thornton's direct testimony.

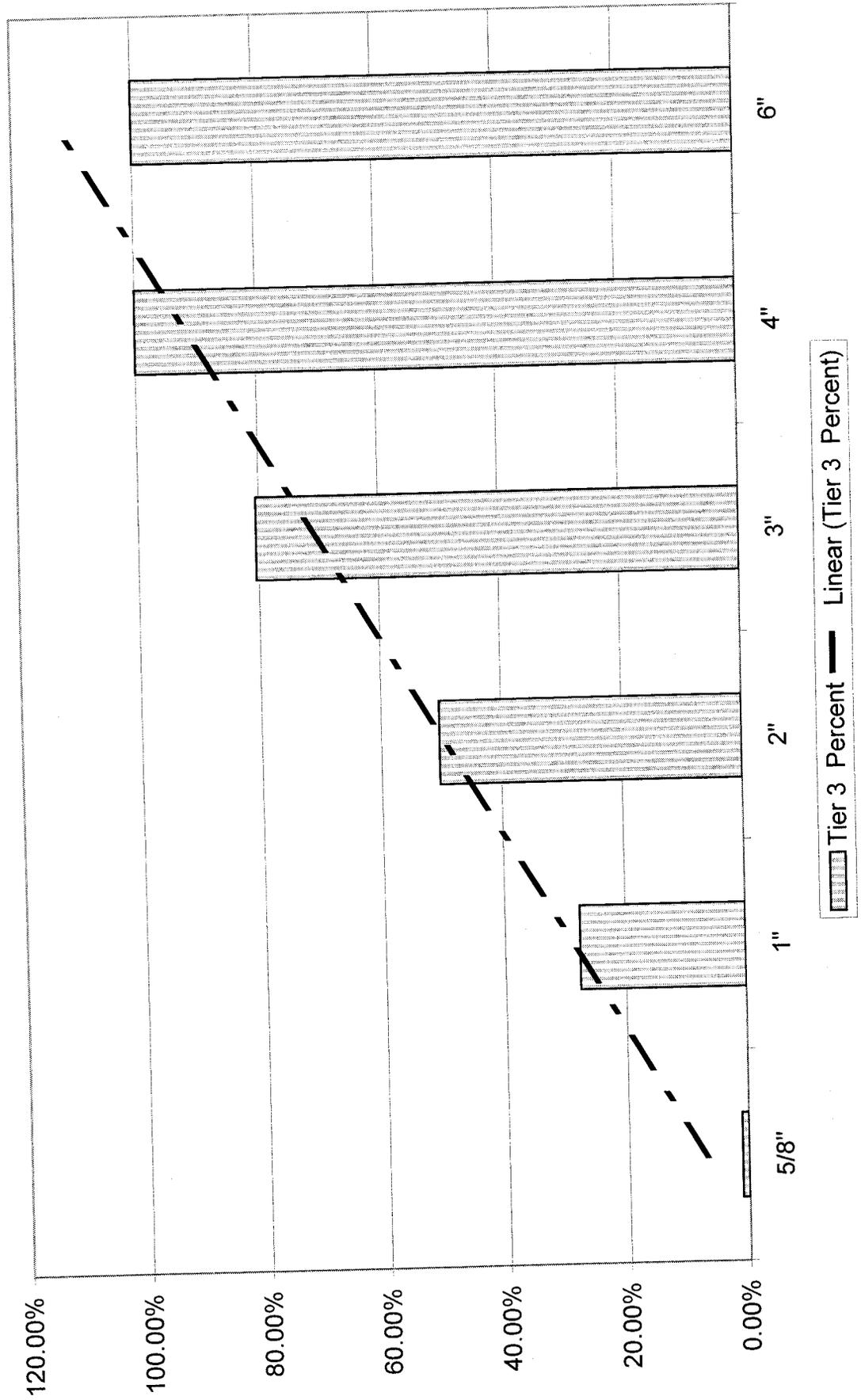
Existing Commodity Revenue As A Percent Of Total Revenue Doesn't Equal Staff's 75% Benchmark Assumption



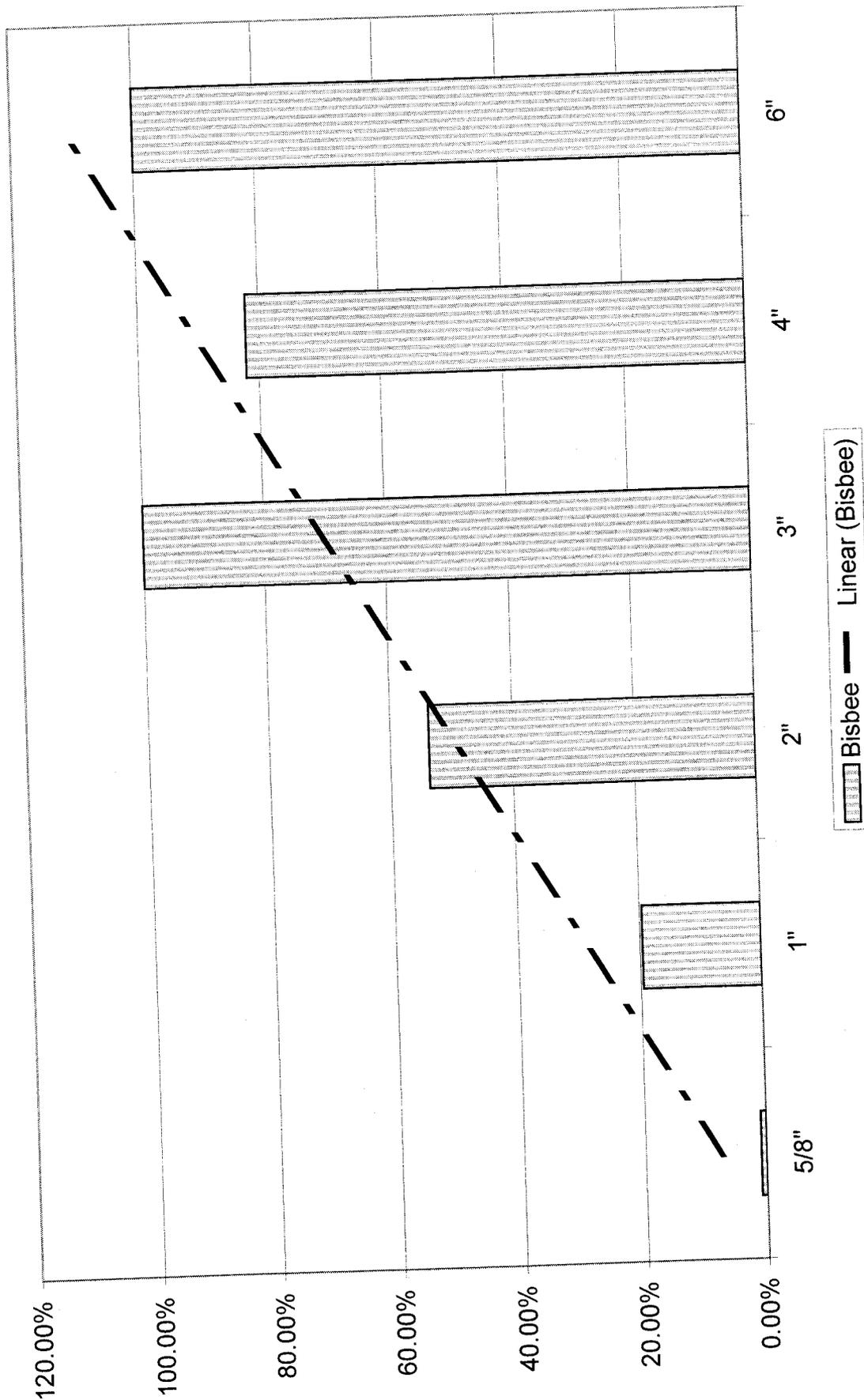
Percent of Use In Tier 3 By Meter Size - Apache Junction



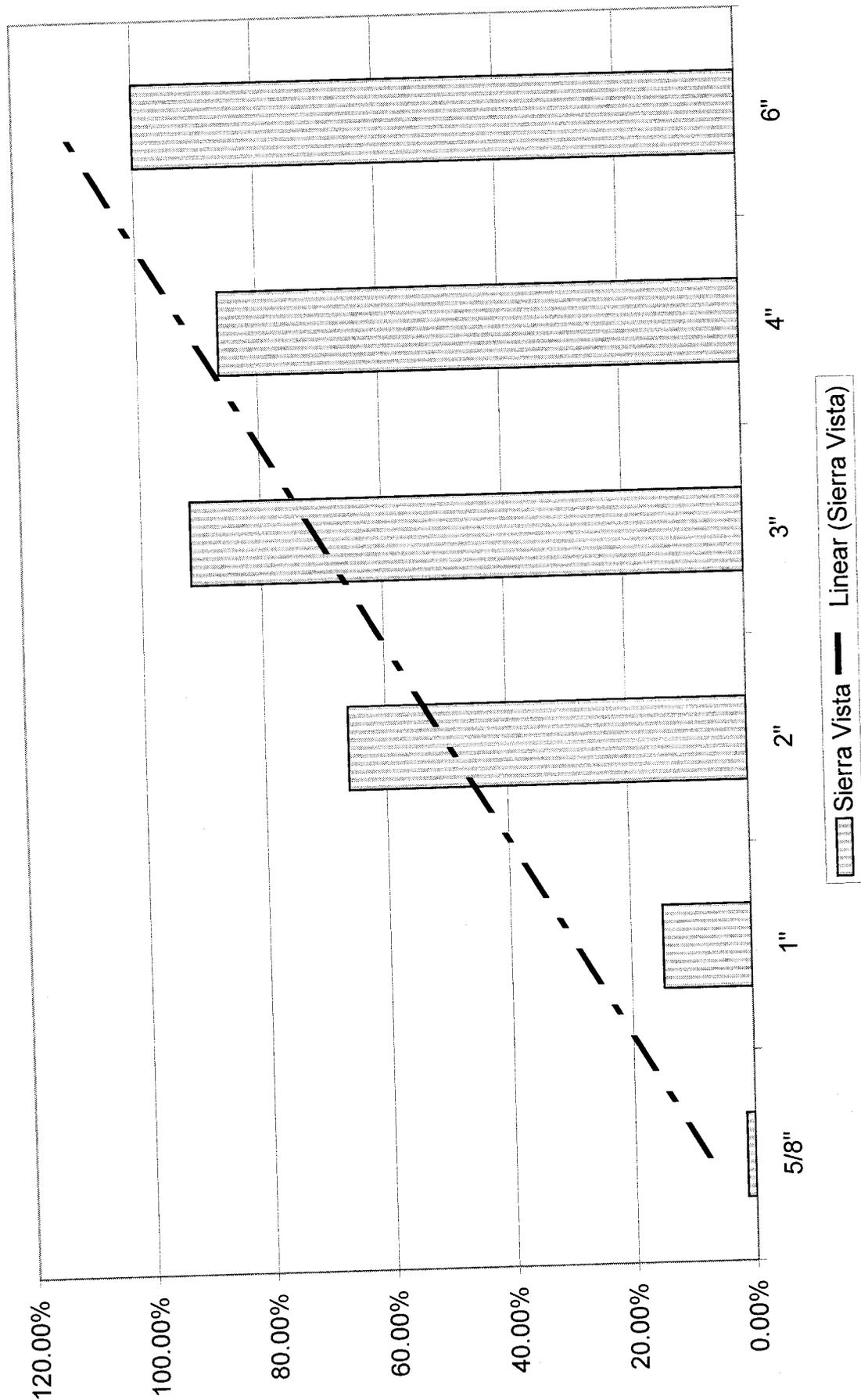
Percent of Use In Tier 3 By Meter Size - Superior



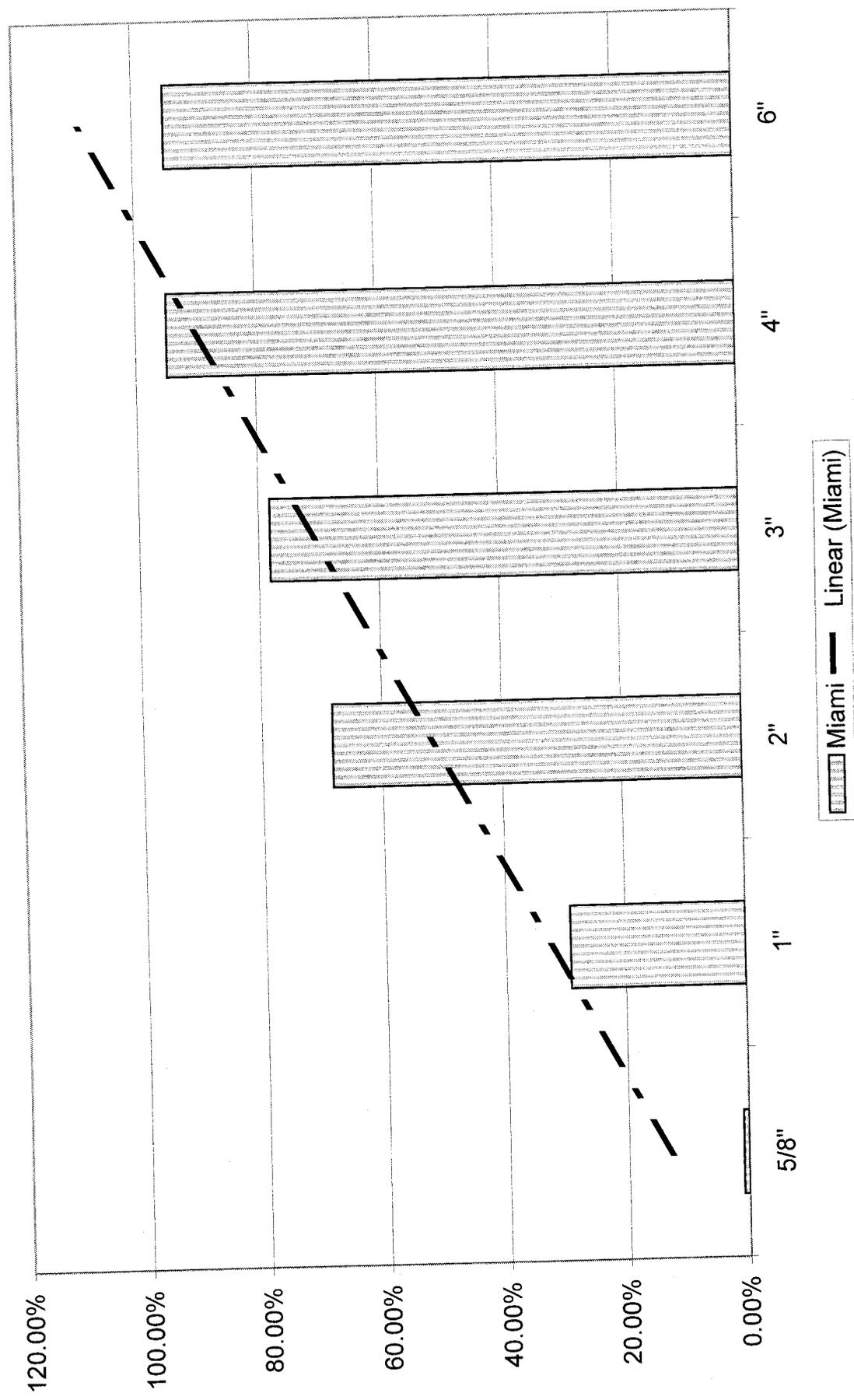
Percent of Use In Tier 3 By Meter Size - Bisbee



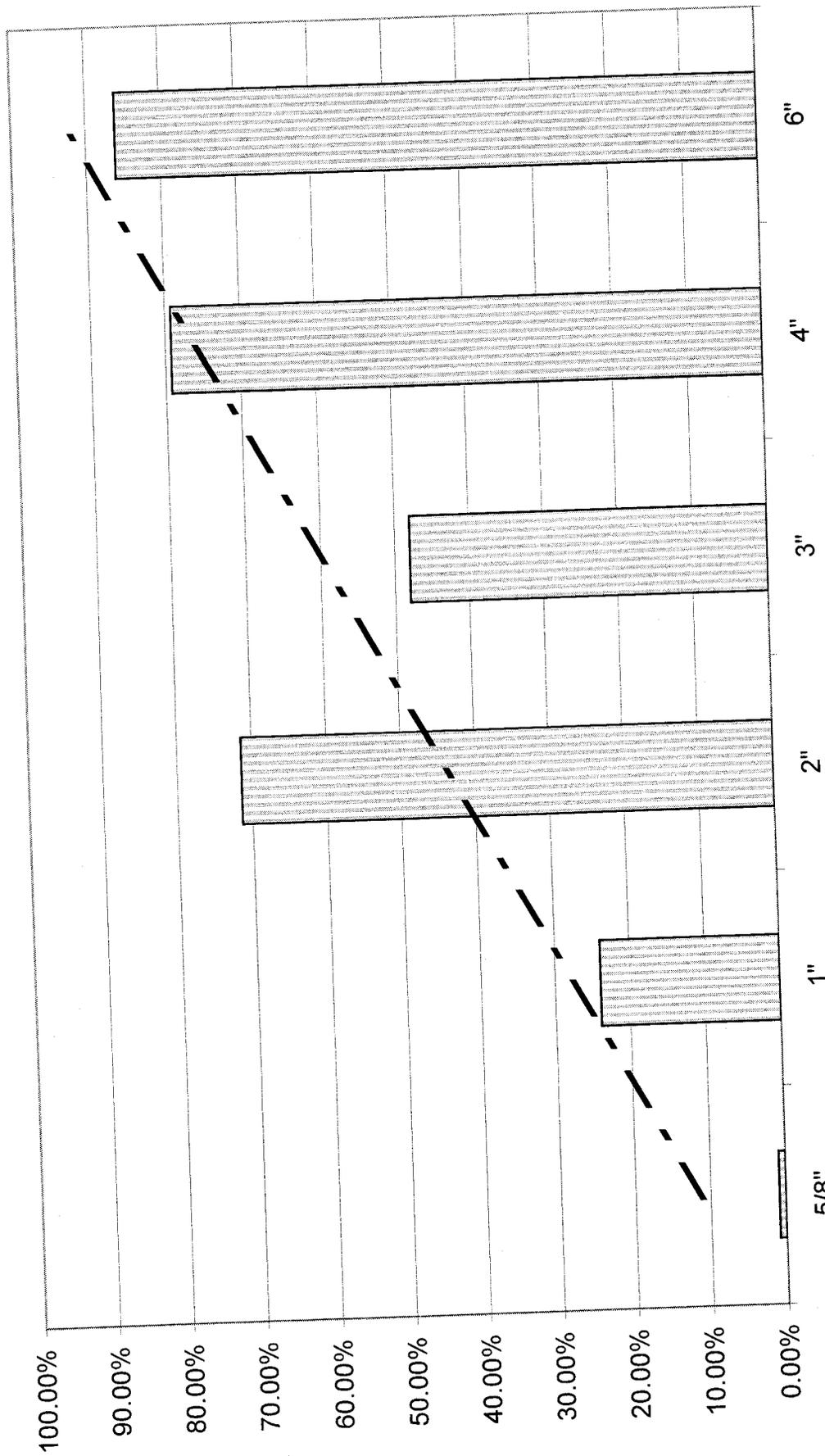
Percent of Use In Tier 3 By Meter Size - Sierra Vista



Percent of Use In Tier 3 By Meter Size - Miami

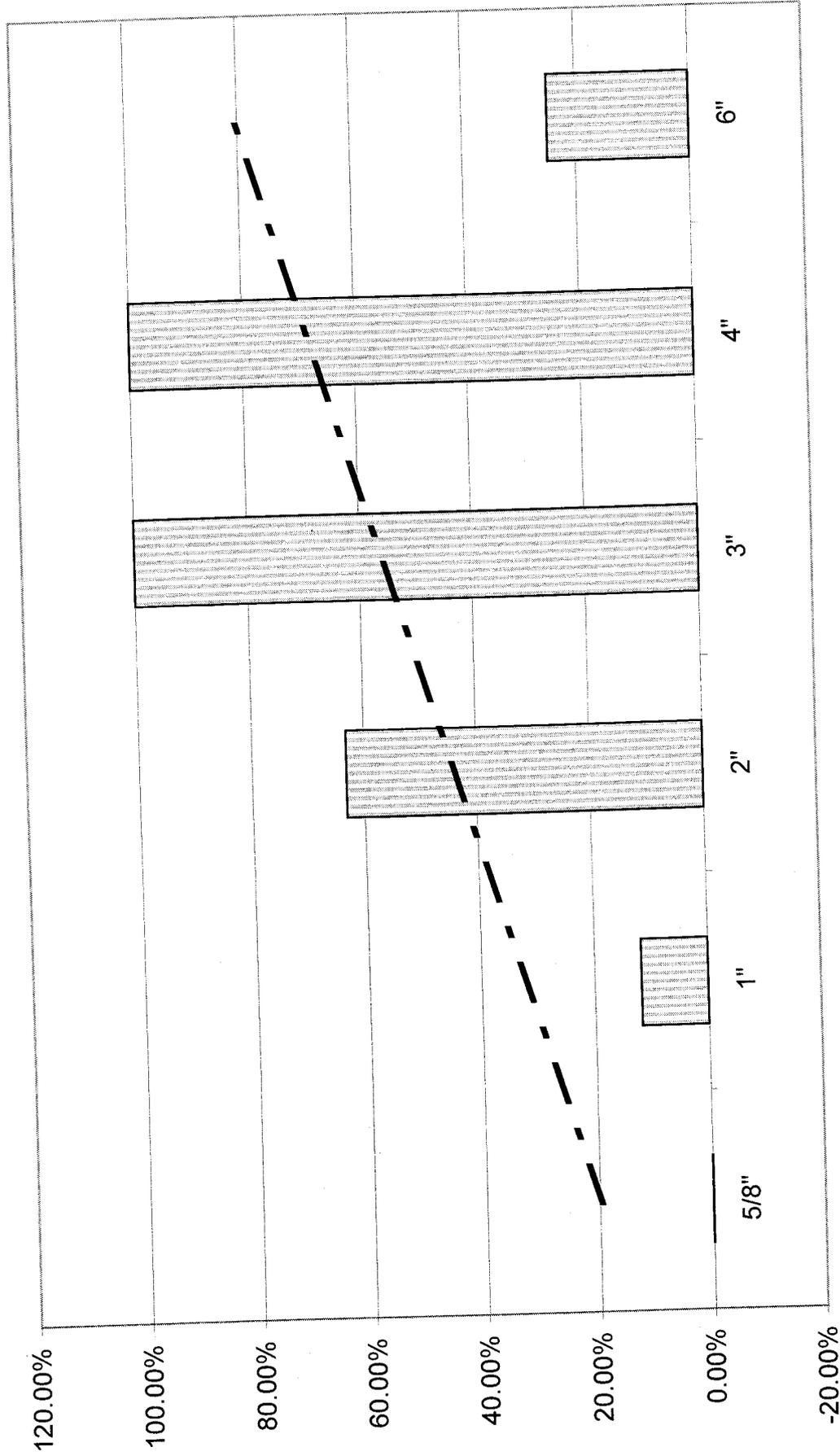


Percent of Use In Tier 3 By Meter Size - San Manuel



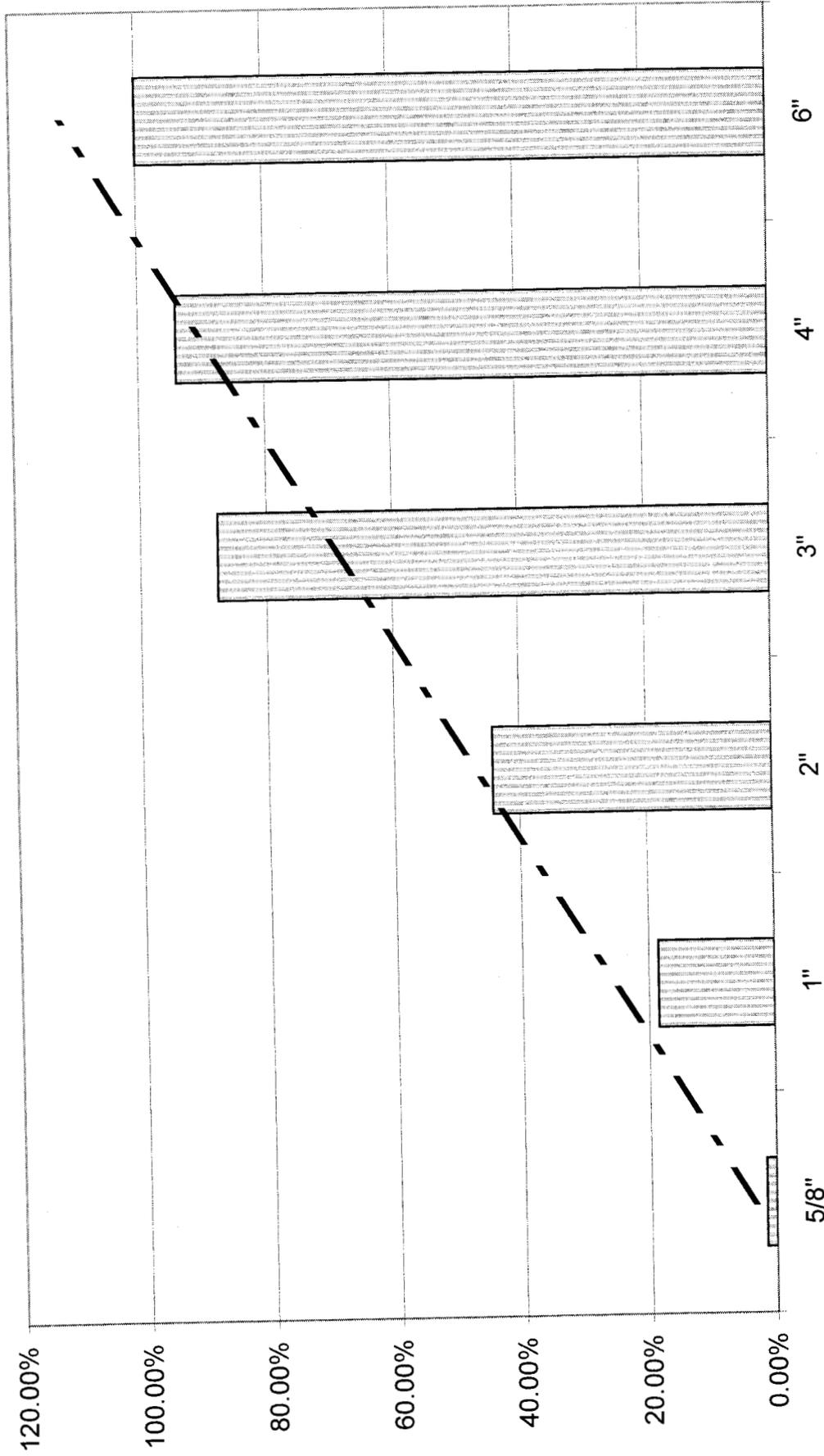
San Manuel — Linear (San Manuel)

Percent of Use In Tier 3 By Meter Size - Oracle



Oracle — Linear (Oracle)

Percent of Use In Tier 3 By Meter Size - Winkelman



Winkelman — Linear (Winkelman)

APACHE JUNCTION

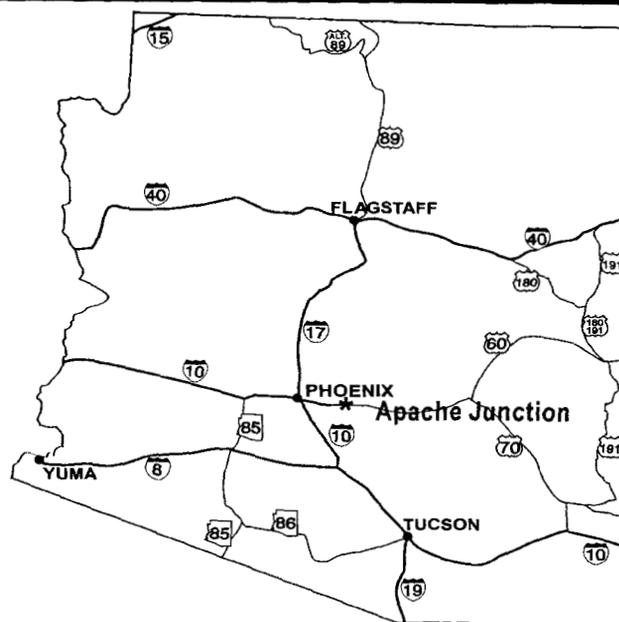
Community Profile

Prepared by the ARIZONA DEPARTMENT OF COMMERCE

Apache Junction is located on the eastern rim of the Phoenix metropolitan area, near the foot of the scenic Superstition Mountains at the junction of U.S. Highways 60 and 89 and state Highway 88. The community is easily accessible by U.S. 60, the Superstition Freeway. Its climate and proximity to outstanding recreational and historical areas draws over 40,000 winter visitors and retirees annually. More than 800 retail and service businesses currently operate within the city. A variety of life styles are offered in Apache Junction, including western rural acreage, urban single-family residential neighborhoods, adult-only retirement clusters and mixed age-group living areas.

COUNTY: Pinal County
HIGHWAYS: I-10, US 60
DISTANCE TO PHOENIX: 36 miles
ENTERPRISE ZONE AVAILABLE/MAIN STREET COMMUNITY

INCORPORATED: Yes - 1978
ELEVATION: 1,715 feet
DISTANCE TO TUCSON: 128 miles



POPULATION

	1990	2000	2002
Apache Junction	18,100	31,814	33,570
Pinal County	116,397	179,727	192,395
Arizona	3,665,228	5,130,632	5,472,750

Sources: Arizona Department of Economic Security and U.S. Census Bureau.

PRINCIPAL ECONOMIC ACTIVITIES

Employment figures for Apache Junction do not truly represent its economic activity; proximity to metropolitan Phoenix gives a far more realistic indication of the area's economic base. Apache Junction's economy is based almost exclusively on recreation and retirement. Most commercial services in the area cater to tourists and recreation seekers on their way to Arizona's central lakes and forests. Extensive developments and accommodations serve many retired persons and winter visitors.

County Employment	1990	2002
Agriculture		2,382
Construction	900	1,700
FIRE	775	875
Government	9,200	15,875
Manufacturing	3,375	3,025
Mining	4,050	1,275
Services	4,425	8,575
TCPU	1,200	650
Trade	5,800	8,050

Sources: Arizona Department of Economic Security

NOTE: Agriculture figure from 2001 4th Qtr., AZ ES 202 Data, AZ Dept. of Econ. Sec. in cooperation with the U.S. Dept. of Labor, Bureau of Labor Statistics.

LABOR FORCE DATA

	1990	2000	2002
Civilian Labor Force	7,350	9,592	10,150
Unemployed	342	294	539
Unemployment Rate	4.7%	3.1%	5.3%

Sources: Arizona Department of Economic Security.

Growth Indicators	1990	2000	2002
New Bldg. Permit	292	985	854
Taxable Sales (\$)	151,611,900	348,320,500	362,562,409
Net Assessed Valuation (\$)	56,979,353	83,019,687	109,142,714

Sources: Arizona State University; AZ Dept. of Revenue; AZ Tax Research Foundation

SCENIC ATTRACTIONS

Apache Junction's main scenic attractions are the Superstition Mountains, which are reputed to be the site of the Lost Dutchman Mine. Many people are still challenged by the thought of discovering the Lost Mine and search the mountains for its location. The name of the mountains, of which Superstition Peak at 5,057 feet is the highest, can be attributed to the legends and stories of the nearby Pima Indians. The Apache Trail, which winds north from Apache Junction, is an exceptionally scenic mountain drive to recreation areas such as Canyon, Apache and Roosevelt lakes, all located in the Salt River Canyon. U.S. 60, to the east, leads to the active mining towns of Globe, Miami and Superior.

APACHE JUNCTION

Community Profile

TAXES

Property Tax Rate	1990	2000	2002
Elem/High School	6.81	7.98	7.67
City/Fire District	1.92	2.53	2.53
Countywide	7.46	7.63	7.63
Total	\$16.19	\$18.14	\$17.83

Sources: Arizona Tax Research Foundation
Note: Tax rate per \$100 assessed valuation.

NOTE: School districts pay an additional secondary rate of 0.1117 in 2002 for East Valley Institute of Technology (EVIT).

Sales Tax Rate

City	2.20%
County	1.00%
State	5.60%

Sources: League of Arizona Cities and Towns, Arizona Dept. of Revenue

COMMUNITY FACILITIES

Apache Junction offers a range of community facilities. There is a city library, senior center, community swimming pool and nine park sites with amenities such as playgrounds, picnic facilities, ball fields as well as basketball, racketball and tennis courts. The city also operates a municipal rodeo arena and events center. A 1,600-acre multi-use municipal park stretches along the city's northern and eastern boundaries and provides opportunities for horseback riding, hiking and activities such as bird watching.

Educational Institutions

	Public	Private
Community College	Y	N
Elementary	Y	N
High School	Y	N
Middle School	Y	N
Technical	N	Y
University 4 year	Y	N

Financial

Number of Banks: 2

Governmental Agencies

Fire Department: Fire District

Law Enforcement: City Police Department

Airports Falcon Field (15 miles west) and Williams Gateway - military reuse (6 miles southwest) both located in nearby Mesa.

Medical

Complete facilities in Mesa, 6 miles.

Hotel and Lodging Facilities

Number of Rooms: 260

Meeting Rooms: 4

Capacity of Largest Facility: 250

Industrial Properties

Information available upon request. Contact the Apache Junction Chamber of Commerce.

Utilities

Electricity	Salt River Project	602.236.8888
Natural Gas	Southwest Gas Corporation	602.861.1999
Sewer	Superstition Mtns. Comm. Fac. Dist.	480.983.2212
Telephone	Qwest (statewide)	800.244.1111
Water	Arizona Water Co.	602.240.6860

Cable Providers: Yes Cable Internet Service Provider: No

Digital Switching Station: Yes Fiber Optics: No

Internet Service Provider: No

Weather

Month	Average Temperature (°F)		Average Total Precipitation (Inches)
	Daily Minimum	Daily Maximum	
January	34.7	66.0	0.83
February	37.0	70.3	0.66
March	40.0	75.0	0.88
April	44.9	82.8	0.38
May	51.8	91.7	0.11
June	60.1	100.5	0.12
July	71.1	102.8	0.98
August	70.0	101.0	1.05
September	62.6	97.3	0.60
October	51.9	87.1	0.79
November	41.4	75.0	0.63
December	35.7	66.9	1.06
Yearly Avg	50.1	84.7	8.08

Western Regional Climate Center, wrcc@dri.edu. Period of record 1948-1976. Nearest data available from Falcon Field, AZ.

This profile was prepared by the Arizona Department of Commerce Communications Division in cooperation with local sources.

For further information, contact:

Apache Junction Area Chamber of Commerce
PO Box 1747 85017/567 W. Apache Trail
Apache Junction, AZ 85217-3699
480.982.3141 Fax: 480.982.3234
Email: ajchamber@qwest.net
www.apachejunctioncoc.com
City of Apache Junction - Economic Development
1001 N. Idaho Rd.
Apache Junction, AZ 85219-2899
480.671.5096

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1700 W. Washington, Suite 600
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Prepared on 5/2003

SUPERIOR

Community Profile

Prepared by the ARIZONA DEPARTMENT OF COMMERCE

Superior is on U.S. 60 at the junction of state Highway 177. The town, in a mountainous setting, is surrounded by peaks such as 6,056-foot Iron Mountain. In 1900, George Lobb laid out the town, naming it Hastings. Mines dotted the hills around the prosperous Pinal County community. Stockholders in one of the successful silver mines lived in Michigan and named their mine Lake Superior. This mine fed the area economy and the community changed its name to Superior after this mine. The Magma Copper Company was established in 1910 and ran the Silver Queen Mine which became a great copper producer after its silver ran out. A smelter was built in 1924 and remained in operation for 47 years.

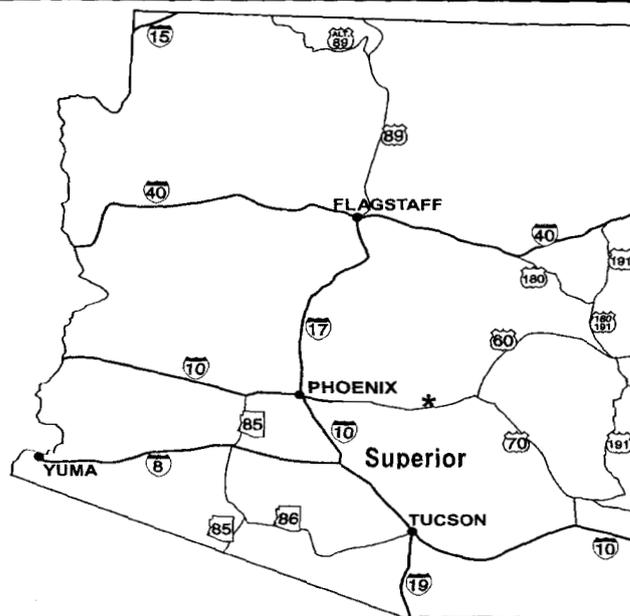
FOUNDED: 1882
 COUNTY: Pinal County
 DISTANCE TO PHOENIX: 63 miles
 HIGHWAYS: US 60; SR 177
 ENTERPRISE ZONE AVAILABLE

INCORPORATED: Yes - 1976
 ELEVATION: 2,820 feet
 DISTANCE TO TUCSON: 102 miles

POPULATION

	1990	2000	2002
Superior	3,468	3,254	3,280
Pinal County	116,397	179,727	192,395
Arizona	3,665,228	5,130,632	5,472,750

Sources: Arizona Department of Economic Security and U.S. Census Bureau.



PRINCIPAL ECONOMIC ACTIVITIES

Major employment sectors in the Superior area include mining, and trade and service. The community is improving its trade and service sector in order to expand the income from tourism. Agriculture is significant to the Pinal County economy. Ranching is conducted in the surrounding areas.

County Employment	1990	2002
Agriculture		2,382
Construction	900	1,700
FIRE	775	875
Government	9,200	15,875
Manufacturing	3,375	3,025
Mining	4,050	1,275
Services	4,425	8,575
TCPU	1,200	650
Trade	5,800	8,050

Sources: Arizona Department of Economic Security

NOTE: Agriculture figure from 2001 4th Qtr., AZ ES 202 Data, AZ Dept. of Econ. Sec. in cooperation with the U.S. Dept. of Labor, Bureau of Labor Statistics.

Major Private Employers

Edwardo's Pizza	Los Hermanos Restaurant
Save Money Market	

Major Public Employers

Arizona Department of Transportation	Boyce Thompson Arboretum
CAAG	Superior School District
Town of Superior	

LABOR FORCE DATA

	1990	2000	2002
Civilian Labor Force	1,097	1,417	1,532
Unemployed	81	69	130
Unemployment Rate	7.4%	4.9%	8.5%

Sources: Arizona Department of Economic Security.

Growth Indicators	1990	2000	2002
New Bldg. Permit	6	12*	N/R
Taxable Sales (\$)	5,588,100	11,313,700	8,602,250
Net Assessed Valuation (\$)	3,412,490	4,160,038	5,315,246

Sources: Arizona State University; AZ Dept. of Revenue; AZ Tax Research Foundation

* Incomplete data: One or more months not available; N/R: No report

SCENIC ATTRACTIONS

Along the famous 98-mile Apache Trail on state Highway 88, imposing saguaros, rugged mountains, desert vistas, and four lakes created by dams on the Salt River give the traveler a glimpse of Arizona's beauty and diversity. East of town are Queen Creek Bridge and Tunnel. On the eastern side of Queen Creek Canyon are the red-streaked towering cliffs of Apache Leap Mountain where Apaches are said to have jumped rather than surrender to U.S. troops. Nearby attractions include Magma Copper Company Mine, the state's largest underground mine; Oak Flats campground; and Boyce Thompson Southwestern Arboretum, with more than 10,000 desert plants. Superior has identified three historic districts and the Superior Historical Society opened the home of Bob Jones (Arizona's sixth governor) as a museum.

SUPERIOR

Community Profile

TAXES

Property Tax Rate	1990	2000	2002
Elem/High School	8.78	7.64	10.29
City/Fire District	0.00	4.12	4.50
Countywide	7.46	7.63	7.63
Total	\$16.24	\$19.39	\$22.42

Sources: Arizona Tax Research Foundation
Note: Tax rate per \$100 assessed valuation.

NOTE: School districts pay an additional secondary rate of 0.500 in 2002 for the Cobra Valley Institute of Technology (CVIT).

Sales Tax Rate

City	2.00%
County	1.00%
State	5.60%

Sources: League of Arizona Cities and Towns, Arizona Dept. of Revenue

COMMUNITY FACILITIES

The Town of Superior has a broad range of community facilities including a senior center, a community center, a library, one swimming pool, a Little League field, two parks with football, softball and baseball fields, and the First Municipal Peace Site in Arizona.

Educational Institutions

	Public	Private
Elementary	Y	N
High School	Y	N
Middle School	Y	N

Financial

Number of Banks: 1

Governmental Agencies

Fire Department: Volunteer

Law Enforcement: City Police Department

Airports

Local municipal airport has one 3,000-ft. runway.

Medical

Copper Canyon Health care and Cobra Valley Health Care Clinic

Hotel and Lodging Facilities

Number of Rooms: 24

Meeting Rooms: 5

Capacity of Largest Facility: 850

Industrial Properties

A 46-acre fully improved industrial park is offering parcels ranging from two to nine acres.

Utilities

Electricity	APS (Statewide)	800.253.9407
Natural Gas	Southwest Gas Corp. (Statewide)	800.766.9722
Sewer	Municipal (Superior)	520.689.5752
Telephone	Qwest (statewide)	800.244.1111
Water	Arizona Water Company (Superior)	520.689.2312

Cable Providers: Yes
Cable Internet Service Provider: Yes
Digital Switching Station: Yes
Fiber Optics: Yes
Internet Service Provider: Yes

Weather

Month	Average Temperature (°F)		Average Total
	Daily Minimum	Daily Maximum	Precipitation (Inches)
January	42.9	60.7	2.03
February	45.3	64.1	1.93
March	48.1	68.3	2.03
April	54.3	76.3	0.79
May	62.3	85.7	0.36
June	71.8	95.3	0.27
July	75.5	97.5	1.95
August	74.0	95.4	2.81
September	71.0	92.0	1.51
October	61.9	82.4	1.23
November	50.9	69.7	1.46
December	44.1	61.6	2.16
Yearly Avg	58.5	79.1	18.52

Western Regional Climate Center, wrcc@dri.edu. Period of record 1920-2001. Avg. snowfall 0.15 in.

This profile was prepared by the Arizona Department of Commerce Communications Division in cooperation with local sources.

For further information, contact:

Superior Chamber of Commerce
P.O. Box 95/350 Main St.
Superior, AZ 85273
520.689.0200 Fax: 520.689.0200
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Prepared on 5/2003

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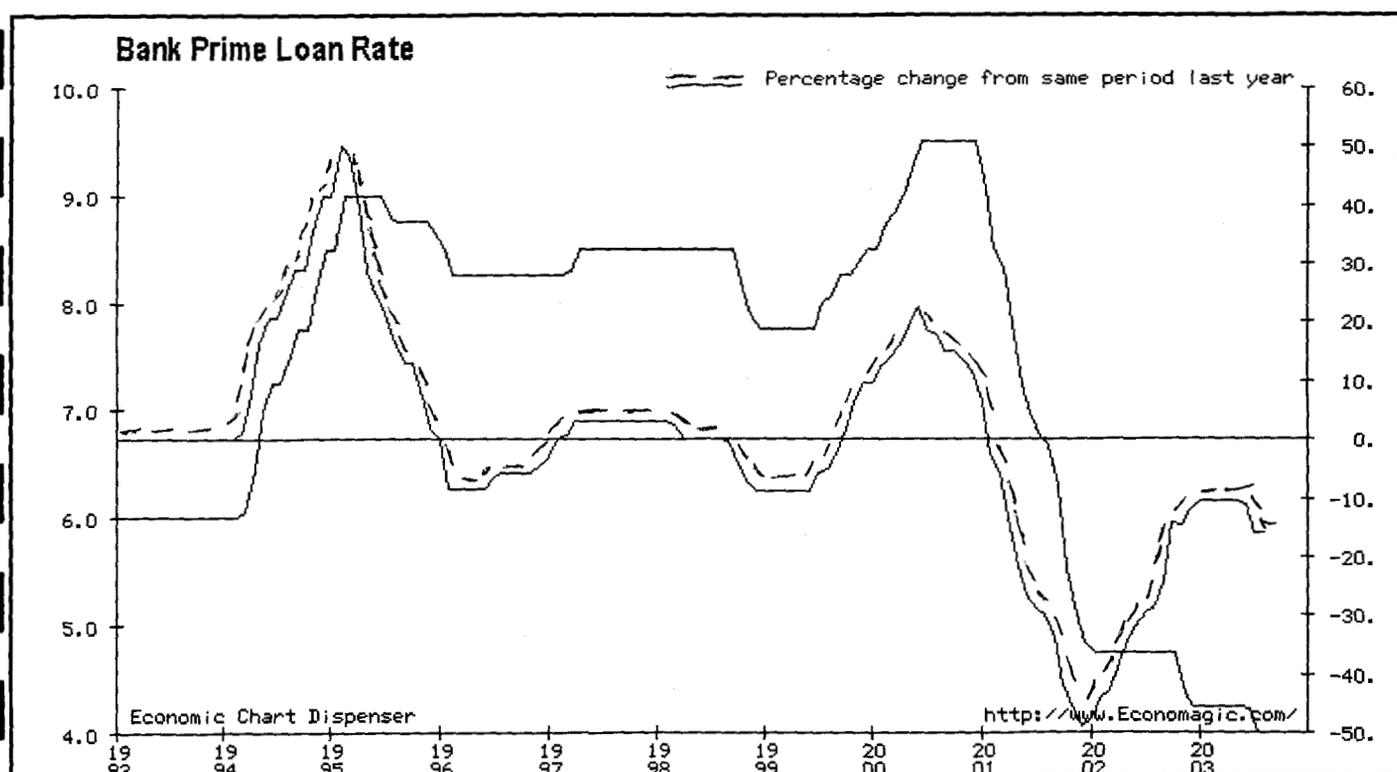
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