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BEFORE THE ARIZONA CORPORATION COMMISSION

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Arizona Corporation Commission

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AZ CORP COMMISSION
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IN THE MATTER OF THE APPLICATION OF
ARIZONA-AMERICAN WATER COMPANY,
AN ARIZONA CORPORATION, FOR A
DETERMINATION OF THE CURRENT FAIR
VALUE OF ITS UTILITY PLANT AND
PROPERTY AND FOR INCREASES IN ITS
RATES AND CHARGES BASED THEREON
FOR UTILITY SERVICE BY ITS SUN CITY
WATER DISTRICT

DOCKET NO. W-01303A-07-0209

NOTICE OF FILING
DIRECT TESTIMONY
BY TOWN OF YOUNGTOWN

The Town of Youngtown ("Youngtown"), through its undersigned legal
counsel, hereby gives notice that pursuant to procedural order dated June 5, 2007, it is this
date filing the direct testimony of Mayor Michael LeVault and Deputy Fire Marshal Ken Rice.

DATED this 15th day of October, 2007.

CURTIS, GOODWIN, SULLIVAN,
UDALL & SCHWAB, P.L.C.

By:

William P. Sullivan

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Phoenix, Arizona 85012-3205

Attorneys for Town of Youngtown

1 **PROOF OF AND CERTIFICATE OF MAILING**

2 I hereby certify that on this 15th day of October, 2007, I caused the foregoing
3 document to be served on the Arizona Corporation Commission by delivering the original and thirteen
4 (13) copies of the above to:

4 Docket Control
5 Arizona Corporation Commission
6 1200 West Washington
7 Phoenix, Arizona 85007

7 COPY of the foregoing hand delivered/mailed
8 this 15th day of October, 2007 to:

8 Christopher Kempley, Chief Counsel
9 Robin Mitchell, Counsel
10 Legal Division
11 Arizona Corporation Commission
12 1200 West Washington
13 Phoenix, Arizona 85007

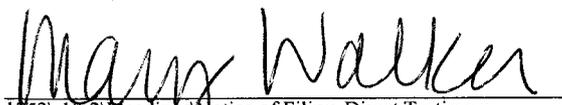
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25 Phoenix, Arizona 85024


1753-10-2 (Pleadings) Notice of Filing Direct Testimony

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

MIKE GLEASON, CHAIRMAN

WILLIAM A. MUNDELL

JEFF HATCH-MILLER

KRISTIN K. MAYES

GARY PIERCE

IN THE MATTER OF THE APPLICATION OF
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DOCKET NO. W-01303A-07-0209

DIRECT TESTIMONY OF MAYOR
MICHAEL LEVAULT

1 **Q: Please state your name and business address for the record.**

2 A: My name is Michael LeVault and my business address is 12030 Clubhouse Square,
3 Youngtown, Arizona 85363.

4
5 **Q: What is your position with the Town of Youngtown?**

6 A: I am the Mayor.

7
8 **Q: Please explain why the Town of Youngtown has intervened in these proceedings.**

9 A: The fact that the water system serving the Town is not capable of uniformly providing
10 the level of fire flow and lacks properly spaced fire hydrants for fire fighting purposes
11 to meet the minimum requirements of the 2006 International Fire Code is of serious
12 concern to the Mayor and Council. These are issues of health and safety. Life and
13 property are at stake.

14
15 The Town does not view meeting minimum fire flow and fire hydrant spacing
16 requirements as discretionary where they can be provided at a reasonable cost and
17 phased-in over a reasonable period of time.

18
19 The four-year fire flow improvement plan recommended by the community based Fire
20 Flow Task Force and proposed by Arizona-American in this proceeding includes
21 44,133 feet of new water mains and 195 new fire hydrants. The specific projects are
22 identified by Exhibit KR- 4, attached to Deputy Fire Marshal Rice's Direct Testimony.
23 These fire flow improvements will not only bring the Youngtown portion of the
24 Arizona-American water system up to minimum fire flow standards, but will do so for
25 all of the Sun City Water District:

- 1 • Sun City - 21,492 linear feet of water main and 78 fire hydrants
- 2 • Youngtown - 21,391 linear feet of water mains and 117 fire hydrants
- 3 • Peoria - 1,250 linear feet of water mains

4

5 At its October 4, 2007 Council Meeting, the Mayor and Council unanimously adopted

6 the “Statement Supporting Fire Flow Improvements Proposed By Arizona-American

7 Water Company” attached to my testimony as Exhibit ML-1. The Statement

8 emphasizes that most of the Sun City Water District’s customers currently are served

9 with a water distribution system capable of meeting minimum fire flow standards.

10 Bringing all of the system up to minimum fire flow and fire hydrant spacing

11 requirements is a matter of public health and safety. Therefore, the Mayor and Council

12 “strongly support the recommendations of the Community Task Force and Arizona-

13 American Water Company relating to fire flow and fire hydrant improvements for the

14 Sun City District.”

15

16 We request “the Arizona Corporation Commission act: (1) to ensure that all customers

17 within the Sun City District are provided similar water service, including access to

18 adequate flows and fire hydrants for fire fighting purposes, (2) to require Arizona-

19 American make the recommended fire protection related improvements to its water

20 distribution system and (3) approve a cost recovery mechanism allowing Arizona-

21 American timely recovery of its actual investment in the fire flow improvements, as

22 they are placed in service.”

23

24 **Q: Is this the first time the Town of Youngtown has raised the issue of fire flow and**

25 **fire hydrant spacing in an Arizona-American rate proceeding?**

1 A: No. The Town raised the issue of inadequate fire flow and fire hydrants within the
2 Town in Arizona-American's last rate proceeding involving the Sun City Water
3 District.

4 **Q: What were the results of those efforts?**

5 A: Commission Decision No. 67093, dated 6/03/2004, ordered Arizona-American Water
6 Company to form a community-wide fire flow task force for the purpose of
7 determining whether the water production capacity, storage capacity, water lines, water
8 pressure, and fire hydrants of Youngtown and Sun City are sufficient to provide the
9 fire protection capacity that is desired by each community.

10

11 **Q: Was such a task force formed?**

12 A: Yes. Arizona-American hired Dr. Marty Rozelle, President of the Rozelle Group, Ltd
13 to organize and facilitate the Task Force. The Fire Flow Task Force was formed in the
14 fall of 2004 with representatives from:

- 15 1) The Sun City Taxpayers Association
- 16 2) A Youngtown resident
- 17 3) Youngtown management (the Town Manager and the Director of Public Works)
- 18 4) The Condominium Owners Association, Inc.
- 19 5) The Sun City Community Fund
- 20 6) The Sun City Home Owners Association
- 21 7) The Youngtown Baptist Village (its Executive Director)
- 22 8) The Sun City Fire Department (the Chief and Assistant Chief)
- 23 9) The Recreation Centers of Sun City (its Sr. Manager)
- 24 10) The City of Surprise Fire Department
- 25 11) Pulte Homes (the representative left Pulte after 3 meetings)

1

2

Arizona-American had its engineers, Brown & Caldwell, analyze the Sun City Water

3

District's water system for low pressure areas, perform a cost-benefit analysis of

4

specific system improvements and suggest an implementation plan. The Task Force

5

endorsed a specific four-year improvement plan that, when completed, provides all

6

portions of the Sun City Water District with the minimum recommended fire flows and

7

hydrants. Improvements are made throughout the Sun City Water District. All

8

members of the Task Force signed a two page statement describing the process and

9

plan that they were submitting to the Commission in compliance with Commission

10

Decision No. 67093.

11

12

Q: Does the Town of Youngtown endorse the recommendations made in the Task

13

Force's Final Report?

14

A: Yes, as reflected by the Statement of Support unanimously adopted by the Mayor and

15

Council.

16

17

Q: Did the Town have its own engineers examine the proposed program?

18

A: The Town contracts with Willdan Engineering to act as the Town Engineer. We asked

19

them to briefly review the proposal and the work performed by Brown and Caldwell.

20

We did not ask for an in-depth review. We have been advised that the cost estimates

21

are reasonable for the proposed plan which will provide adequate fire flows to all areas

22

indicated.

23

24

Q: Why does Youngtown believe it appropriate for Arizona-American to make these

25

improvements?

1 A: Fire protection is a matter of public health and safety. An adequate water supply is
2 critical to providing fire fighting services. The water distribution system serving the
3 community is the most efficient and economical method of providing the community
4 with an adequate water supply for fire protection purposes. Arizona-American owns
5 the system and therefore, should be required to make the improvements necessary to
6 meet minimum fire flow and fire hydrant spacing standards. I can not over emphasize
7 that these improvements impact the health and safety of the customers and property
8 served by Arizona-American.

9

10 **Q: Does Youngtown view fire flow improvements as discretionary?**

11 A: The improvements being proposed address life and safety issues. They do no more
12 than ensure that the water system uniformly achieves well defined and widely accepted
13 minimum Fire Code requirements. The improvements should not be deemed
14 discretionary unless they create an unreasonable cost burden on the Company or its
15 customers.

16

17 The fire flow improvement program proposes completion of ten specific projects, one
18 of which has been completed. The annual expenditures are estimated to be about
19 \$700,000 for each of the first three years, with approximately \$1,000,000 for the final
20 year. We understand these are estimates and based upon 2004 dollars and therefore,
21 the final costs are likely to be higher. The sooner the program is initiated the less it will
22 be impacted by rising costs.

23

24 This level of expenditure appears extremely reasonable for an entity providing water
25 and wastewater service in several areas throughout the State of Arizona and owned by

1 a parent with similar interests in multiple jurisdictions. Decision No. 67093
2 established that as of December 31, 2001, the Sun City Water District alone had a Fair
3 Value Rate Base of \$13,643,019 and an authorized annual operating income of
4 \$777,652. The \$3.1 million in fire flow improvements represent a Company
5 investment, on average, of \$2.83 per Sun City Water District customer per month over
6 a four year period. This estimate is derived by dividing the \$3.1 million by the 2006
7 year end customer count of 22,826 (22,070 residential + 756 commercial customers),
8 then dividing by 4 and then dividing by 12.

9
10 Phasing the cost of these improvements into customer rates over four years and
11 amortizing recovery over the life of the improvements, as proposed by Arizona-
12 American, will minimize the rate impact of these improvements. We understand
13 Arizona-American has estimated that the average Sun City Water District Customer
14 (8,269 gallons per month) will see their water cost increase 3.5 cents per thousand in
15 year one, another 3.9 cents per thousand in year two, 4.0 cents per thousand in year
16 three and 6.0 cents per thousand in year four, for a total increase, after all
17 improvements are made and in service after four years, of 17.4 cents per thousand
18 gallons.

19
20 **Q: Is the investment for fire flow and fire hydrants mandatory for new construction?**

21 **A:** Yes. New subdivisions and new commercial buildings will not be approved unless
22 they demonstrate that they meet the requirements of the local fire department and the
23 local water company.
24
25

1 **Q: Do most of the Sun City Water District customers already benefit from a water**
2 **system that meets minimum fire flow and fire hydrant requirements?**

3 A: The information supplied by Arizona-American to the Task Force identified limited
4 areas where inadequate flows exist and additional fire hydrants are needed. While
5 these areas are spread across the Sun City Water District, most customers have access
6 to the minimum level of fire flow and fire hydrants required by the 2006 International
7 Fire Code.

8

9 **Q: Does Youngtown believe all Sun City Water District customers should have access**
10 **to a similar quality of service?**

11 A: We recognize that water service will not be exactly the same throughout the Sun City
12 Water District. However, all customers pay uniform rates and therefore should receive
13 substantially similar service. This is especially true with regard to items relating to
14 public health and safety. When areas of unequal service are identified, the Company
15 should be required to evaluate that situation and develop a method of addressing the
16 inequality. That is exactly what has taken place here. Implementation of the proposed
17 four year fire flow improvement plan will provide a similar quality of service to all
18 customers in an area uniformly recognized as important to the health and safety of the
19 public.

20

21 **Q: Why doesn't the Town fund the improvements in Youngtown directly?**

22 A: In 1994, Youngtown sold its water and wastewater systems to Arizona-American's
23 predecessor. The system was sold "As Is." The sale was prompted due to the Town's
24 need for cash to meet the cost of providing other public services and in recognition that

25

1 its residents should benefit from the economies of scale associated with the integration
2 into the much larger Sun City Water District.

3
4 The Town continues to struggle to find the revenues necessary to provide services to
5 its residents. The Town simply does not have the financial means to make these
6 improvements. However, even if we did, there are legal limitations that likely preclude
7 us from making this type of investment in a water system owned by a third party public
8 service corporation. As reflected in the Task Force minutes of January 18, 2005 and
9 February 15, 2005, the Town's former Town Manager investigated whether
10 Community Development Block Grant monies could be secured for this purpose. He
11 reported that CDBG funds cannot be used for any of the fire flow infrastructure
12 improvements because the facilities are not owned by a public entity. Because of the
13 Town's legal and financial limitations, the Town's direct financing of these
14 improvements is not a realistic alternative to the proposal made by Arizona-American
15 in this proceeding.

16
17 **Q: Why shouldn't the improvements be allocated directly to those customers directly**
18 **benefitted?**

19 **A:** First, the fire flow improvement plan benefits the entire Sun City Water District. As
20 noted earlier in my testimony, fire flow improvements will be made in Sun City, Peoria
21 and Youngtown and located throughout the District. Moreover, achieving minimum
22 fire flows and hydrant spacing is of community-wide health and safety concern.
23 Additionally, all customers are already paying a pro rata share of providing minimum
24 fire flows to the portions of the Sun City Water District that already have such flows.
25 No customers should be specially allocated costs for new lines and hydrants necessary

1 so their level of service equals that already available to most Sun City Water District
2 customers.

3
4 Finally, we understand that the Arizona Corporation Commission, more than a decade
5 ago, adopted a policy recognizing fire protection as a general health, safety and welfare
6 benefit. As a result, costs related to providing fire flows and fire hydrants, when
7 provided, are now recovered as part of the general rates and not as a separate rate
8 imposed on the entity providing fire fighting service to the community. An attempt to
9 allocate the cost of the proposed fire flow improvements among specific Sun City
10 Water District customers would be a step away from this policy and, respectfully, in
11 my opinion a step backward.

12

13 **Q: Does the Town support the cost recovery mechanism proposed by Arizona**
14 **American?**

15 **A:** I am not familiar with the technical rate setting methodologies associated with cost
16 recovery. As a policy matter, the Town supports any cost recovery mechanism that is
17 fair both to Arizona-American and its customers.

18

19 I am informed that Arizona-American's rate recovery proposal is generally consistent
20 with traditional ratemaking in that it requires the Company to make the investment and
21 place plant in service before it can recover a return on that plant. On the other hand, I
22 am informed that the proposed adjustment mechanism will allow recovery of those
23 costs earlier and outside of a full rate proceeding.

24

25

1 It seems reasonable to allow annual adjustments where costs are associated with
2 specifically identified construction projects necessary to provide for the general public
3 health and safety. Furthermore, smaller incremental increases made on an annual basis
4 as improvements are made and placed in service permits customers to better anticipate
5 and integrate the costs of these improvements into their budgets.

6
7 **Q: Do you have any further remarks you would like to make?**

8 A: I would like to thank the Commissioners and their Staff for the opportunity to present
9 the Town's position on this important topic and for their thorough and fair evaluation
10 of Arizona-American's proposed fire flow improvement program. My wife and I have
11 attended a ten week Citizens Academy conducted by the Sun City Fire Department.
12 This course served to strengthen my appreciation for the public service rendered by our
13 fire fighters and the dangers they face on our behalf. We owe it to them and our
14 neighbors to ensure that these brave men have the tools necessary to provide this
15 service. Minimum fire flows and sufficient fire hydrants are part of the tools of their
16 trade. I am here, on behalf of Youngtown, to ask that the Commission ensure that the
17 firemen fighting fires in the Sun City Water District have those tools at their disposal.
18 The Town respectfully requests the Arizona Corporation Commission order Arizona-
19 American to make the proposed fire flow improvements in order to protect the public
20 health and safety.

21
22 **Q: Does that conclude your direct testimony?**

23 A: Yes it does.

24

25 1753\10-2 AZ Am 2007 Rate App\Pleadings\Testimony Mayor LeVault

EXHIBIT ML-1

TOWN OF YOUNGTOWN
STATEMENT SUPPORTING FIRE FLOW IMPROVEMENTS
PROPOSED BY ARIZONA-AMERICAN WATER COMPANY

Arizona-American Water Company is proposing to make over Three Million Dollars (\$3,000,000) in fire flow improvements to its water system over a four year period. The improvements were recommended by a Community Task Force composed of representatives from 9 entities/major organizations within the service area.

Most, but not all, of the water distribution system serving the Sun City District provides minimum fire flow and has sufficient hydrants to meet the recommendations set forth in the 2006 International Fire Code. A few areas, including much of the Town of Youngtown, do not. The current situation represents a hazard to the public health and safety. Completing the proposed improvements will ensure that flows for fire fighting purposes and fire hydrants are uniformly available throughout Arizona-American's Sun City service area and will enhance the public health and safety.

The improvements being proposed will benefit customers residing in Youngtown, Sun City and Peoria. Approximately 44,133 linear feet of new pipes/mains and 195 new fire hydrants are to be installed. Arizona-American will provide the funding and make the improvements, so long as the Arizona Corporation Commission finds the improvements to be prudent and approves a rate mechanism permitting Arizona-American to earn the same return on these fire protection related improvements, once constructed and in use, as on the rest of its system.

The Mayor and Council of the Town of Youngtown strongly support the recommendations of the Community Task Force and Arizona-American Water Company relating to fire flow and fire hydrant improvements for the Sun City District. The Youngtown Mayor and Council respectfully request the Arizona Corporation Commission act: (1) to ensure that all customers within the Sun City District are provided similar water service, including access to adequate flows and fire hydrants for fire fighting purposes; (2) to require Arizona-American make the recommended fire protection related improvements to its water distribution system and (3) approve a cost recovery mechanism allowing Arizona-American timely recovery of its actual investment in the fire flow improvements, as they are placed in service.

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

MIKE GLEASON, CHAIRMAN

WILLIAM A. MUNDELL

JEFF HATCH-MILLER

KRISTIN K. MAYES

GARY PIERCE

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WATER DISTRICT

DOCKET NO. W-01303A-07-0209

DIRECT TESTIMONY OF DEPUTY
FIRE MARSHAL KEN RICE

1 **Q: Please state your name and business address for the record.**

2 A: My name is Ken Rice and my business address is 18602 N. 99th Avenue, Sun City,
3 Arizona 85373.

4
5 **Q: By whom and in what capacity are you employed?**

6 A: I am employed by the Sun City Fire Department and serve as Deputy Fire Marshal.
7

8 **Q: How long have you been employed by the Sun City Fire Department?**

9 A: I have been employed by Sun City Fire Department for 1.5 years.
10

11 **Q: What Certifications do you hold relevant to your current employment.**

12 A: I hold the following certifications:

13 **American Association of Code Enforcement**

14 AACE Code Enforcement Administrator (expires 7/02/10)

15 AACE Code Enforcement Officer (expires 7/02/10)

16 AACE Property Maintenance & Housing Insp. (expires 11/25/09)

17 AACE Zoning Enforcement Officer (expires 7/25/10)

18 **International Code Council**

19 Certified Building Official (expires 7/12/10)

20 Certified Fire Code Official (expires 7/27/10)

21 Certified Housing Code Official (expires 7/27/10)

22 Fire Inspector I (expires 1/28/10)

23 Fire Inspector II (expires 9/05/09)

24 Fire Plans Examiner (expires 4/17/10)

25 Property Maintenance & Housing Inspector (expires 1/28/10)

1 Residential Building Inspector (expires 1/28/10)

2 Zoning Inspector (expires 1/28/10)

3

4 **Q: Is the Sun City Fire Department a department of the Sun City Fire District?**

5 A: Yes.

6

7 **Q: Is the Sun City Fire District a political subdivision of the State of Arizona?**

8 A: It is my understanding that the Sun City Fire District is a political subdivision of the
9 State of Arizona. It is governed by a five member Board of Directors that are elected
10 by the residents of the District. A copy of the Department's history, as provided on the
11 Department's website, is attached to my testimony as KR-1.

12

13 **Q: Does the Sun City Fire Department provide fire protection service throughout the
14 entire the Sun City Water District?**

15 A: We have primary fire protection responsibility throughout most of the Sun City Water
16 District. The Peoria and Surprise Fire Departments do have primary responsibility for
17 a few small areas within the Sun City Water District.

18

19 **Q: Does the Sun City Fire Department own, operate or maintain a water distribution
20 system to provide water for fire suppression purposes?**

21 A: No. We rely on the local water utility for our primary water supply.

22

23 **Q: Does the Sun City Fire Department have a role in establishing level of fire flows
24 and number of fire hydrants that will be available?**

25

1 A: Yes. For example, Chapter 3, Section 304.2.b of Maricopa County's Subdivision

2 Design Principles provide:

3 "Fire hydrants will be connected to an adequate water supply and
4 shall be provided in accordance with the recommendations or
5 requirements of water departments or water companies and fire
6 departments or districts having jurisdiction for all subdivisions
7 having lots 190,000 square feet or less in size."

8
9 The Administrative Guidelines published by Maricopa County explain:

10 "It is the responsibility of the subdivider or developer to ensure that
11 all subdivisions are initially provided with adequate fire protection
12 facilities."

13
14 When new preliminary subdivision plats or plans for new commercial structures in the
15 Sun City Water District are submitted with the local governmental entity for review
16 and approval, the Sun City Fire Department is provided an opportunity to make written
17 comments and recommendations on any area we serve. In this way, new construction
18 is designed so that we have the opportunity to provide reasonable fire protection to the
19 area, including adequate fire flow and reasonably spaced fire hydrants to meet the
20 needs of those who will live and work in the area.

21
22 **Q: Does the Sun City Fire Department rely on particular publications or codes in**
23 **making their recommendations?**

24 A: Yes. The Sun City Fire Department looks to the 2006 Edition of the International Fire
25 Code (the "Fire Code") in making our recommendations. With regard to fire flow and

1 fire hydrants, we rely on Appendices B and C, copies of which are attached to my
2 testimony as Exhibit KR-2 and KR-3.

3

4 **Q: What are the recommended minimum fire flows and hydrant spacing?**

5 A: For one and two family dwellings, Appendix B of the Code establishes 1,000 gallons
6 per minute as the minimum fire-flow requirement, provided the fire-flow calculation
7 area does not exceed 3,600 square feet. The next step-up is to 1,500 gallons per
8 minute.

9 Appendix C of the Fire Code requires that an area with fire flows of 1,750 gallons per
10 minute or less is to have fire hydrants every 500 feet, with a maximum distance from
11 the road or frontage of 250 feet.

12

13 **Q: Please explain why the spacing of fire hydrants and the level of fire flow is a**
14 **matter of public health and safety.**

15 A: Time and water volume are critical elements in fire fighting. Our objective is to arrive
16 at the scene and commence fire suppression efforts as quickly as possible with the
17 capability of putting a significant amount of water on the fire. A matter of seconds or
18 limited water supplies can result in the loss of life and significantly increase the loss of
19 property. The requirements set forth in the Fire Code reflect the minimums deemed
20 necessary today to meet these objectives.

21

22 **Q: What happens when you arrive at a fire with improperly spaced hydrants or**
23 **inadequate fire flow available?**

24 A: The modern fire truck is equipped with 1,000 foot of fire hose. Most of our fire trucks
25 are capable of pumping at the rate of 1,500 gallons per minute. If a fire hydrant is not

1 located in the vicinity of the fire, we are delayed while we connect hoses together and
2 try to situate ourselves in order to commence fire fighting activities. The longer the
3 hose, the more pressure needed to transport it. If the volume of water available is
4 below the recommended levels, we are able to apply less water. Further, it is more
5 likely that the water system will be damaged as undersized lines can collapse when
6 connected to our equipment. As already mentioned, this additional time and limited
7 water supply can result in loss of life and increased property damage.

8
9 **Q: Did the Sun City Fire Department participate in the Sun City Fire Flow Task**
10 **Force in 2004 and 2005?**

11 A: Yes. Fire Chief Jim Sebert and Assistant Fire Chief Steve Morrow were members of
12 the Task Force and one or both attended all of the Task Force meetings.

13
14 **Q: Did the Task Force identify areas in the Sun City Water District where fire flows**
15 **are inadequate and/or there are insufficient fire hydrants?**

16 A: Yes. Areas in Sun City, Peoria and Youngtown were identified with either inadequate
17 fire flows or insufficient fire hydrants or both.

18
19 **Q: Does the Sun City Fire Department view these inadequacies as a threat to life and**
20 **property?**

21 A: Yes. As I have discussed, the level of fire flows and the location and spacing of fire
22 hydrants are critical elements in fighting fires. When minimum standards established
23 by the Fire Code are not met, there is a greater likelihood that life and property will be
24 lost when there is a fire.

25

1 **Q: Does the Sun City Fire Department believe that the fire flow improvements**
2 **recommended by the Sun City Fire Flow Task Force Final Report are necessary**
3 **and appropriate?**

4 A: Yes. We find the recommendations to be supported by the study conducted by Brown
5 and Caldwell and consistent with problems identified during our regular inspections
6 and water flow tests conducted in the Sun City Water District. I note that the
7 improvements recommended by the Fire Flow Task Force and adopted by Arizona-
8 American Water will only provide the minimum fire flows and fire hydrants required
9 by the Fire Code to all areas within the Sun City Water District.

10

11 **Q: Please describe the improvements that are being proposed.**

12 A: A total of ten projects were recommended by the Task Force. For the Commission's
13 convenience, I have attached a copy of the list to my testimony as Exhibit KR-4. At
14 the hearing, I anticipate having one or more maps available as a visual aide.
15 As is evident by the project list, some areas, including commercial areas, are serviced
16 by 2 and 4 inch pipe. These pipes will be replaced with 6, 8 and 10 inch pipes. In
17 some areas new piping is installed to provide better looping. Additional hydrants are
18 to be installed throughout many areas of the Sun City Water District. Exhibit KR-5
19 sets forth the phasing of these projects proposed by the Task Force. Improvements
20 will be made within Sun City and Youngtown each of the four years. All Peoria
21 related improvements are proposed for Year 2.

22

23 **Q: Will the proposed fire flow improvements benefit the entire Sun City Water**
24 **District?**

25

1 A: Yes. First, the improvements will actually be made throughout the Sun City Water
2 District. Secondly, the inability to fight a fire in one locality can have far wider
3 negative impacts than to that one area. If a fire cannot be controlled, it is far more
4 likely to spread. Thus, the lack of a hydrant on one block may result in a neighbor's
5 house being engulfed in fire also. Third, we are a mobile society. A person or their
6 possessions may be lost in a fire located miles away from their primary residence and
7 place of work. Finally, fire fighting should be viewed as a community-wide service.
8 We should strive, as a community, to meet the minimum flow and hydrant
9 requirements.

10 **Q: Does this conclude your direct testimony?**

11 A: Yes it does.

12

13

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22 1753\10-2 AZ Am 2007 Rate App\Pleadings\Direct Testimony of Deputy Fire Marshal

23

24

25

EXHIBIT KR-1

Sun City Fire District History

Fire protection for Sun City began in the early 1960's when the Del E. Webb Corporation first began building homes. In those early years each homeowner interested in having fire protection service would enter into an annual "subscription" with a local fire protection company and pay that company a fee based on property values. This subscription entitled the property owner to unlimited fire protection and emergency service protection. Non-subscribers were assessed service fees based on hourly manpower and fire apparatus charges as well as a base service charge. Limited first aid service was also available from the fire protection company.

On June 23, 1966 the Sun City Fire District was established under Arizona law (Title 48, Chapter 5) after an affirmative vote by the electors of Sun City and an order by the Maricopa County Board of Supervisors. The original district, which covered Sun City only south of Grand Avenue, has since been enlarged by five separate annexations to include all areas from Olive Avenue on the south to Beardsley Road on the north. Under fire district law, a board of citizens is elected to govern the district. The board elected in 1966 entered into a master contract with the private fire protection company to cover the entire community. This eliminated the fire subscription fee program.

The largest and most destructive fire in Sun City occurred on February 15, 1972. The Lakes Club on Thunderbird Boulevard was nearing completion when a plumber using a blowtorch accidentally ignited combustible materials within a wall. The fire traveled within the wall spreading to the attic and went unnoticed for a period of time. The sprinkler system was not yet completed and was ineffective in controlling the fire. The local fire equipment and mutual aid companies from the surrounding area could do little to save the building. The fire loss was set at \$1,000,000.

Fire district board members were concerned after the Lakes Club fire and reviewed the fire protection program, manpower, apparatus and fire station locations provided by the private contractor. This review led the Fire Board to take the following actions.

1. The district purchased two pumpers each capable of large volumes of water (1250 & 1500 gallons per minute respectively) in late 1972.
2. The district, with the support of the Del Webb Corp., opened a fire station at 99th Avenue & Bell Road in 1973.
3. The district purchased a 100 ft. Aerial truck in 1975.
4. The district, again with the support of the Del Webb Corp., opened a second station at 99th Avenue & Sun City Boulevard in late September 1975.
5. The district purchased a third pumper in early 1976.

These actions placed the district in the position of owning all the firefighting equipment and stations necessary to operate their own department excluding personnel. A contract was maintained by the district with the private fire protection company to furnish manpower and management services until 1989.

On September 16, 1988 the Sun City Fire District Board voted to complete the last phase of operating its own fire department by hiring their own personnel. At 8:00a.m. on January 1, 1989 firefighters reported to duty for the first time as direct employees of the fire district. On this date the Sun City Fire District also began providing emergency services to the Town of Youngtown and the Youngtown Police Department provided 9-1-1 dispatch services to Sun City, both under separate contracts.

On January 10, 1990 the Sun City Fire Department joined a consortium of fire departments and entered into an automatic aid program with Phoenix, Glendale, Peoria, Tempe, Tolleson, Laveen and Daisy Mountain. Under automatic aid, dispatching computers select the closest available fire, rescue and or paramedic units without regard of jurisdictional boundaries. Participating in automatic aid reduced average response times to less than four minutes.

1990 also marked the beginning of a fire department based paramedic program. With fire stations geographically distributed throughout the community, a fire department paramedic response averages only 3.45 minutes.

The most recent chapter in district history occurred with the purchase and refurbishment of the fire station located at 111th Avenue and Windsor Drive. In September 1992 the district purchased the station property from a private owner who had been indirectly leasing the station to the department. On November 6, 1993 the remodeled and

refurbished station was dedicated to the citizens of our community.

The **Sun City Fire District** itself was formed on June 16, 1966 and is one of the busiest of the 150 fire districts in Arizona.

EXHIBIT KR-2

APPENDIX B

FIRE-FLOW REQUIREMENTS FOR BUILDINGS

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION B101 GENERAL

B101.1 Scope. The procedure for determining fire-flow requirements for buildings or portions of buildings hereafter constructed shall be in accordance with this appendix. This appendix does not apply to structures other than buildings.

SECTION B102 DEFINITIONS

B102.1 Definitions. For the purpose of this appendix, certain terms are defined as follows:

FIRE-FLOW. The flow rate of a water supply, measured at 20 pounds per square inch (psi) (138 kPa) residual pressure, that is available for fire fighting.

FIRE-FLOW CALCULATION AREA. The floor area, in square feet (m²), used to determine the required fire flow.

SECTION B103 MODIFICATIONS

B103.1 Decreases. The fire chief is authorized to reduce the fire-flow requirements for isolated buildings or a group of buildings in rural areas or small communities where the development of full fire-flow requirements is impractical.

B103.2 Increases. The fire chief is authorized to increase the fire-flow requirements where conditions indicate an unusual susceptibility to group fires or conflagrations. An increase shall not be more than twice that required for the building under consideration.

B103.3 Areas without water supply systems. For information regarding water supplies for fire-fighting purposes in rural and suburban areas in which adequate and reliable water supply systems do not exist, the fire code official is authorized to utilize NFPA 1142 or the International Wildland-Urban Interface Code.

SECTION B104 FIRE-FLOW CALCULATION AREA

B104.1 General. The fire-flow calculation area shall be the total floor area of all floor levels within the exterior walls, and under the horizontal projections of the roof of a building, except as modified in Section B104.3.

B104.2 Area separation. Portions of buildings which are separated by fire walls without openings, constructed in accordance with the International Building Code, are allowed to be considered as separate fire-flow calculation areas.

B104.3 Type IA and Type IB construction. The fire-flow calculation area of buildings constructed of Type IA and Type IB construction shall be the area of the three largest successive floors.

Exception: Fire-flow calculation area for open parking garages shall be determined by the area of the largest floor.

SECTION B105 FIRE-FLOW REQUIREMENTS FOR BUILDINGS

B105.1 One- and two-family dwellings. The minimum fire-flow requirements for one- and two-family dwellings having a fire-flow calculation area which does not exceed 3,600 square feet (344.5 m²) shall be 1,000 gallons per minute (3785.4 L/min). Fire-flow and flow duration for dwellings having a fire-flow calculation area in excess of 3,600 square feet (344.5 m²) shall not be less than that specified in Table B105.1.

Exception: A reduction in required fire flow of 50 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system.

B105.2 Buildings other than one- and two-family dwellings. The minimum fire-flow and flow duration for buildings other than one- and two-family dwellings shall be as specified in Table B105.1.

Exception: A reduction in required fire-flow of up to 75 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2. The resulting fire-flow shall not be less than 1,500 gallons per minute (5678 L/min) for the prescribed duration as specified in Table B105.1.

SECTION B106 REFERENCED STANDARDS

ICC	IBC	International Building Code	B104.2, Table B105.1
ICC	IWUIC	International Wildland-Urban Interface Code	B103.3
NFPA	1142	Standard on Water Supplies for Suburban and Rural Fire Fighting	B103.3

**TABLE B105.1
MINIMUM REQUIRED FIRE-FLOW AND FLOW DURATION FOR BUILDINGS^a**

FIRE-FLOW CALCULATION AREA (square feet)					FIRE-FLOW (gallons per minute) ^c	FLOW DURATION (hours)
Type IA and IB ^b	Type IIA and IIIA ^b	Type IV and V-A ^b	Type IIB and IIIB ^b	Type V-B ^b		
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	2
22,701-30,200	12,701-17,000	8,201-10,900	5,901-7,900	3,601-4,800	1,750	
30,201-38,700	17,001-21,800	10,901-12,900	7,901-9,800	4,801-6,200	2,000	
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250	
48,301-59,000	24,201-33,200	17,401-21,300	12,601-15,400	7,701-9,400	2,500	
59,001-70,900	33,201-39,700	21,301-25,500	15,401-18,400	9,401-11,300	2,750	
70,901-83,700	39,701-47,100	25,501-30,100	18,401-21,800	11,301-13,400	3,000	3
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250	
97,701-112,700	54,901-63,400	35,201-40,600	25,901-29,300	15,601-18,000	3,500	
112,701-128,700	63,401-72,400	40,601-46,400	29,301-33,500	18,001-20,600	3,750	
128,701-145,900	72,401-82,100	46,401-52,500	33,501-37,900	20,601-23,300	4,000	4
145,901-164,200	82,101-92,400	52,501-59,100	37,901-42,700	23,301-26,300	4,250	
164,201-183,400	92,401-103,100	59,101-66,000	42,701-47,700	26,301-29,300	4,500	
183,401-203,700	103,101-114,600	66,001-73,300	47,701-53,000	29,301-32,600	4,750	
203,701-225,200	114,601-126,700	73,301-81,100	53,001-58,600	32,601-36,000	5,000	
225,201-247,700	126,701-139,400	81,101-89,200	58,601-65,400	36,001-39,600	5,250	
247,701-271,200	139,401-152,600	89,201-97,700	65,401-70,600	39,601-43,400	5,500	
271,201-295,900	152,601-166,500	97,701-106,500	70,601-77,000	43,401-47,400	5,750	
295,901-Greater	166,501-Greater	106,501-115,800	77,001-83,700	47,401-51,500	6,000	
—	—	115,801-125,500	83,701-90,600	51,501-55,700	6,250	
—	—	125,501-135,500	90,601-97,900	55,701-60,200	6,500	
—	—	135,501-145,800	97,901-106,800	60,201-64,800	6,750	
—	—	145,801-156,700	106,801-113,200	64,801-69,600	7,000	
—	—	156,701-167,900	113,201-121,300	69,601-74,600	7,250	
—	—	167,901-179,400	121,301-129,600	74,601-79,800	7,500	
—	—	179,401-191,400	129,601-138,300	79,801-85,100	7,750	
—	—	191,401-Greater	138,301-Greater	85,101-Greater	8,000	

For SI: 1 square foot = 0.0929 m², 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

a. The minimum required fire flow shall be allowed to be reduced by 25 percent for Group R.

b. Types of construction are based on the *International Building Code*.

c. Measured at 20 psi.

EXHIBIT KR-3

APPENDIX C

FIRE HYDRANT LOCATIONS AND DISTRIBUTION

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION C101 GENERAL

C101.1 Scope. Fire hydrants shall be provided in accordance with this appendix for the protection of buildings, or portions of buildings, hereafter constructed.

SECTION C102 LOCATION

C102.1 Fire hydrant locations. Fire hydrants shall be provided along required fire apparatus access roads and adjacent public streets.

SECTION C103 NUMBER OF FIRE HYDRANTS

C103.1 Fire hydrants available. The minimum number of fire hydrants available to a building shall not be less than that listed in Table C105.1. The number of fire hydrants available to a complex or subdivision shall not be less than that determined by spacing requirements listed in Table C105.1 when applied to fire apparatus access roads and perimeter public streets from which fire operations could be conducted.

SECTION C104 CONSIDERATION OF EXISTING FIRE HYDRANTS

C104.1 Existing fire hydrants. Existing fire hydrants on public streets are allowed to be considered as available. Existing fire hydrants on adjacent properties shall not be considered available unless fire apparatus access roads extend between properties and easements are established to prevent obstruction of such roads.

SECTION C105 DISTRIBUTION OF FIRE HYDRANTS

C105.1 Hydrant spacing. The average spacing between fire hydrants shall not exceed that listed in Table C105.1.

Exception: The fire chief is authorized to accept a deficiency of up to 10 percent where existing fire hydrants provide all or a portion of the required fire hydrant service.

Regardless of the average spacing, fire hydrants shall be located such that all points on streets and access roads adjacent to a building are within the distances listed in Table C105.1.

**TABLE C105.1
NUMBER AND DISTRIBUTION OF FIRE HYDRANTS**

FIRE-FLOW REQUIREMENT (gpm)	MINIMUM NUMBER OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS ^{a, b, c} (feet)	MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT ^d
1,750 or less	1	500	250
2,000-2,250	2	450	225
2,500	3	450	225
3,000	3	400	225
3,500-4,000	4	350	210
4,500-5,000	5	300	180
5,500	6	300	180
6,000	6	250	150
6,500-7,000	7	250	150
7,500 or more	8 or more ^e	200	120

For SI: 1 foot = 304.8 mm, 1 gallon per minute = 3.785 L/m.

- a. Reduce by 100 feet for dead-end streets or roads.
- b. Where streets are provided with median dividers which can be crossed by fire fighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet on each side of the street and be arranged on an alternating basis up to a fire-flow requirement of 7,000 gallons per minute and 400 feet for higher fire-flow requirements.
- c. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet to provide for transportation hazards.
- d. Reduce by 50 feet for dead-end streets or roads.
- e. One hydrant for each 1,000 gallons per minute or fraction thereof.

EXHIBIT KR-4

KR-4

ARIZONA AMERICAN WATER COMPANY
SUN CITY/YOUNGTOWN FIRE FLOW CAPACITY STUDY

Recommended Improvements

No.	Description	Quantity	Unit	Size	Unit Price	Construction	Engineering	TOTAL
1	Sun City/Youngtown Pressure Reducing/Pressure Sustaining Valve modifications	1	LS			10,000		10,000
2	Piping Improvements - Youngtown Commercial							
	Install new 10" pipe in Grand Avenue west connecting to 10" in 111th Avenue	1,050	LF	10"	66	69,300	6,930	76,230
	Install new 6" pipe in 113th Avenue connecting to new 10" pipe in Grand	272	LF	6"	46	12,512	1,251	13,763
	Connect 6" pipe in 111th Avenue with 10" pipe in 111th Avenue	1	LS	NA	10,000	10,000	1,000	11,000
	Connect 6" pipe to 6" pipe at 113th Drive and 113th Lane	1	LS	NA	5,000	5,000	500	5,500
	Install new 6" pipe in 113th Ave at Spanish Gardens	498	LF	6"	46	22,908	2,291	25,199
	Install new 6" pipe in Tennessee Avenue	775	LF	6"	46	35,650	3,565	39,215
	Install new 6" pipe in Wisconsin	498	LF	6"	47	23,406	2,341	25,747
	Install Fire Hydrants in Youngtown Commercial Area	11	EA	NA	5,000	55,000	5,500	60,500
	Subtotal Item 2					233,776	23,378	257,154
3	Youngtown Neighborhood Commercial - 111th Ave south of Youngtown Ave							
	Replace existing 2" and 4" with 8" piping; connect to existing 6"	700	LF	8"	56	39,200	3,920	43,120
	Install new Fire Hydrants	4	EA	NA	5,000	20,000	2,000	22,000
	Subtotal Item 3					59,200	5,920	65,120
4	Youngtown Residential							
	replace 4" with 6" in Illinois; install new 6" connecting to 6" in 14th Dr	1,400	LF	6"	46	64,400	6,440	70,840
	Install Fire Hydrant	1	EA	NA	5,000	5,000		5,000
	Subtotal Item 4							75,840
4b	Youngtown - Install Fire hydrants on existing pipe	58	EA	NA	5,000	280,000		280,000
4c	Youngtown - Install new 6" pipe for Fire Hydrants	15,271	LF	6"	46	702,466		702,466
	Youngtown - Fire Hydrants	45	EA	NA	5,000	225,000		225,000
	Subtotal Item 4							927,466
5	Sun City Residential							
	Replace 4" with 6" in N. Cherry Hills Drive	5,200	LF	6"	46	239,200	23,920	263,120
	Install Fire Hydrants - Cherry Hills Dr	3	EA	NA	5,000	15,000		15,000
	Replace 4" in N. Pebble Beach Dr. with 6"	1,400	LF	6"	46	64,400	6,440	70,840
	Install Fire Hydrant - Pebble Beach	1	EA	NA	5,000	5,000		5,000
	Subtotal Item 5					323,600	30,360	353,960
5b	Install Fire Hydrants on existing piping	52	EA		5,000	260,000		260,000
5c	Sun City - Install new 6" pipe for Fire Hydrants	14,197	LF	6"	46	653,062		653,062
	Sun City - Fire Hydrants	23	EA	NA	5,000	115,000		115,000
	Subtotal Item 5c							768,062
6	City of Peoria - Paradise MHP							
	Replace 6" with 8" pipe connecting Paradise MHP on Union Hills	1,250	LF	8"	56	70,000	7,000	77,000
	Loop 6" pipe in north part of Paradise MHP	1	LS		5,000	5,000	500	5,500
	Subtotal Item 6					75,000	7,500	82,500
	TOTAL							3,080,102

BROWN AND CALDWELL

2/9/2005

EXHIBIT KR-5

KR-5

ARIZONA AMERICAN WATER COMPANY
 SUN CITY DISTRICT FIRE FLOW IMPROVEMENTS
 SUN CITY DISTRICT FIRE FLOW IMPROVEMENTS
 IMPROVEMENT PHASING

No	Description	Year 2004 \$	Future Year \$
Year 1 (2005)			
1	Sun City/Youngtown Pressure Reducing/Pressure Sustaining Valve modifications	\$ 10,000	
Total - Immediate Improvements		\$ 10,000	
Year 2 (2006)			
3	Youngtown Neighborhood Commercial - 111th Ave south of Youngtown Ave	\$ 65,120	
4	Youngtown Residential	\$ 75,840	
4b	Youngtown - Install Fire hydrants on existing pipe	\$ 280,000	
5b	Sun City - Install Fire Hydrants on existing pipe	\$ 260,000	
Total for Year 1		\$ 680,960	\$ 701,389
Year 3 (2007)			
6	City of Peoria - Paradise MHP	\$ 82,500	
5	Sun City Residential	\$ 353,960	
4c	Youngtown - 6" piping and fire hydrants	\$ 263,108	
Total for Year 2		\$ 699,568	\$ 742,172
Year 4 (2008)			
4c	Youngtown - 6" piping and fire hydrants	\$ 411,848	
5c	Sun City - 6" piping and fire hydrants	\$ 291,086	
Total for Year 3		\$ 702,934	\$ 768,115
Year 5 (2009)			
4c	Youngtown - 6" piping and fire hydrants	\$ 252,510	
5c	Sun City - 6" piping and fire hydrants	\$ 476,976	
2	Piping Improvements - Youngtown Commercial	\$ 257,154	
Total for Year 4		\$ 986,640	\$ 1,110,472
Total All Improvements		\$ 3,080,102	

BROWN AND CALDWELL

2/9/2005