

TONTO HILLS DOMESTIC WATER IMPROVEMENT DISTRICT

MAILING ADDRESS

11228 E. Hohokam Lane
Cave Creek, AZ 85331

PHONE: (480) 595-0128 office

EMAIL: board@tontohillsdwid.org

WEBSITE: www.tontohillsdwid.org

WATER EMERGENCIES

(480) 745-1427

To: All applicants for water service

RE: WATER SERVICE APPLICATION PACKAGE

Dear Applicant:

Enclosed please find the Water Service Application Package for New Members of the Tonto Hills Domestic Water Improvement District (THDWID). This package contains:

1. Instructions for Application for Water Service
2. Application for Water Service - New Member
3. Fee Schedule, which describes Usage Charges, Commodity Rates, and Service Line and Meter Installation Charges
4. Water Customer Responsibilities
5. THDWID New Build/Remodel Water Considerations

Please read and become familiar with the requirements contained in these documents and in the THDWID Policy and Procedures, which you are agreeing to follow by signing the Application for Water Service. Please pay particular attention to the requirements for **Backflow Prevention**. These documents are revised from time to time and new versions are posted when available on our website at: www.tontohillsdwid.org.

Another document that contains information that may be useful to you is our Frequently Asked Questions (FAQs), which can be found at the "DWID FAQ's" link on the front page of our website.

Commercial Parcels: The THDWID has adopted a policy of ***mandatory Reduced Pressure Principle (RP) Backflow Prevention Assemblies*** to be installed and tested at **all commercial parcels** prior to occupancy. Please refer to the section on Backflow Prevention in our Policies and Procedures on our website at: www.tontohillsdwid.org/water-district/documents.html.

If you have any questions about this application or the associated documents, please don't hesitate to contact the THDWID Board Members at the phone and email shown above in the letterhead.

Best Regards,

Your Tonto Hills DWID Board

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INSTRUCTIONS FOR APPLICATION FOR WATER SERVICE

Only legal owners of real property within the Tonto Hills Domestic Water Improvement District (the THDWID) are authorized to sign the Application for Water Service and are responsible for ensuring that the water bills are paid and the Policy and Procedures are followed. The Policies and Procedures can be downloaded from the THDWID website at www.tontohillsdwid.org and are available in hard copy on request. ***Pay special attention to Backflow Prevention requirements.*** The Policies and Procedures will be amended from time to time, as necessary. Notice will be given when substantive revisions are made to the content. Please provide the following information when completing the Application:

- **Application Fee:** Contact the THDWID (**phone: 480-595-0128; email: board@tontohillsdwid.org**) to determine the fees for your service Application and enter this amount on the form.
- **Service Address:** Indicate property owner's name(s), address, lot number, and contact information for the property where service is requested. This contact information may be used for water emergencies.
- **Billing Address:** If the property owner would like the monthly invoices delivered to an address different than the service address, indicate the name, address, and telephone for that recipient.
- **Start Date:** Give the desired starting date for water service to the property.
- **Water Use Information:** In order to ensure the THDWID orders the proper amount of water deliveries each year from Central Arizona Project and the City of Scottsdale, it is helpful to evaluate and track how water use varies within the THDWID over time. Please indicate the number of individuals living at the property and what the general uses of the water are anticipated to be.
- **Signature:** Sign and date the Application. Only one of the property owner's signatures is needed.
- **How to Submit Application:** Please mail or email the application to the THDWID mailing or email address in the letterhead above, together with a copy of the driver's license or passport of the person signing the Application and a check for the Application fee. The THDWID needs to verify identity for purposes of the Application.
- **Schedule Turn On of Service:** The THDWID Superintendent resides in Tonto Hills; please call to schedule your appointment: **Lou Frederick, 480-406-7293.**
- **Email Address:** Many of our more urgent communications regarding water service maintenance and interruptions are most efficiently delivered via email. Please provide your email address to help our notification process. You may also request to receive your water bills via email.
- **Resident Directory:** Tonto Hills maintains a resident directory for use by District members only. Please indicate if you authorize your contact information to be included in the directory by circling **YES** or **NO** where indicated on the signature line.

Please contact the Board with any questions (phone: 480-595-0128; email: board@tontohillsdwid.org).

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APPLICATION FOR WATER SERVICE — NEW MEMBER

FEES REQUIRED AT TIME OF APPLICATION:

Line & Meter Installation Fee: \$ _____
Service Establishment Fee: \$ **100.00**
Security Deposit (refundable): \$ _____
Infrastructure Fee: \$ _____
Other Fees, if applicable: \$ _____
Sales Tax: \$ _____
TOTAL: \$ _____

FOR OFFICE USE ONLY

DATE: _____
ACCOUNT #: _____ LOT NO.: _____
METER READ: _____ METER SIZE: 5/8" 3/4" 1"

Make checks payable to Tonto Hills DWID

THE UNDERSIGNED HEREBY APPLIES FOR A SERVICE CONNECTION WITH TONTO HILLS DOMESTIC WATER IMPROVEMENT DISTRICT ("THDWID") AND, IF WATER SERVICE IS PROVIDED, AGREES TO THE FOLLOWING:

1. Comply in a timely manner with all terms, conditions, and fees and charges described in the THDWID Policies and Procedures, as amended from time to time, which include the Fee Schedule adopted by THDWID and which are incorporated as part of this Agreement. The Policies and Procedures may be downloaded from our website (see letterhead) and are available in hard copy on request. A summary of Customer responsibilities is attached hereto for convenience; please note **Backflow Prevention** requirements.
2. Bill payments, including all applicable fees and sales tax, are due on the 20th of each billing month, which will be about 10 or more days after the bill mailing date. Any Customer account is considered delinquent if payment has not been received within ten (10) calendar days after the due date. A Late Payment Fee will be assessed on all payments received by the THDWID after this 10-day period. Thirty (30) calendar days after the delinquent date, the THDWID may discontinue service to the Customer whose bill is delinquent. Each bill will contain total balance due and notice of actions to be taken if not paid within this 30-day period. No late notice is sent to the Customer, other than the water bill. Service will be reconnected only after all due bills are paid in full, together with any turn-off fee, reconnection fee, security deposit, and other applicable charges, in accordance with the Policies and Procedures. Failure to receive bills or notices that have been properly placed in the U.S. Mail (or emailed per Member instructions) shall not prevent such bills from becoming delinquent nor does it relieve the Customer of the obligation to pay the bill or to comply with the terms and provisions of a notice.
3. As part of the responsibility to provide proper access, Customer shall keep a sufficient area around the water meter clear of vegetation or other objects that may hinder the meter reader from easily and safely accessing Customer's meter.

To be completed by the THDWID Member ONLY, proof of identification required: Please print clearly

Service Address (Customer's Parcel):

Name: _____

Address: _____

City, State, Zip: _____

Telephone: _____ Lot No.: _____

No. of individuals in household: _____

List all uses of water (e.g., household, pool, landscaping, commercial, industrial, agricultural, etc.): _____

Billing Address: (If different from service address)

Name: _____

Address: _____

City, State, Zip: _____

Telephone: _____

Service Start Date requested: _____

Signature: _____ Date: _____ *Add to Resident Directory? (circle one): YES NO*

(By signing this form, you represent that you are the legal owner of the parcel at the Service Address above)

E-Mail Address for notices and newsletters: _____

Type of proof of identification (e.g., driver's license, passport): _____ ***(attach copy)***

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FEE SCHEDULE

A. Usage Charges, Commodity Rates, and Service Line and Meter Installation Charges

The following usage and commodity rates have been effective since January 1, 2014. Conservation Stages are defined in the Policies and Procedures (see www.tontohillsdwd.org).

COMMODITY RATES PER 1,000 GALLONS PER MONTH BY CONSERVATION STAGE IN EFFECT				
(Zero Gallons Included in Base Rate)		Stages 1 & 2	Stage 3 ^a	Stage 4 ^a
1st Tier: 0 – 4,000 Gallons	\$	6.80	6.80	6.80
2nd Tier: 4,001 – 13,000 Gallons	\$	10.20	10.20	10.20
3rd Tier: 13,001 – 20,000 Gallons	\$	12.30	15.00	20.00
4th Tier: 20,001 – 30,000 Gallons	\$	12.42	20.00	40.00
5th Tier: over 30,000 Gallons	\$	12.55	30.00	70.00

MONTHLY USAGE CHARGES (BASE RATE)		
5/8" Meter (includes 5/8" x 3/4")	\$	40.00
3/4" Meter	\$	40.00
1" Meter	\$	100.00

SERVICE LINE AND METER INSTALLATION CHARGES^b		
5/8-inch Meter (includes 5/8 x 3/4)	\$	800.00
3/4-inch Meter	\$	1,000.00
1-inch Meter	\$	1,200.00

SERVICE CHARGES		
Establishment	\$	100.00
Disconnection (Delinquent or other) – “turn off”	\$	50.00
Reconnection (Delinquent or other) – “turn on”	\$	50.00
After Hours Surcharge for above services	\$	50.00
Late Payment Fee	\$	10.00
Collection Fee	\$	25.00
Security Deposit (refundable if account paid)	\$	250.00
Re-Establishment (within 12 months) – “standby”	\$	---- ^c
Deferred Payment (per month charge)	\$	1.50%/mo
Interest on Delinquent Balances	\$	---- ^d
Insufficient Funds (NSF) Check	\$	35.00
Meter Re-read (If Correct)	\$	15.00
Meter Test (If Correct)	\$	---- ^e
Meter replacement at Customer request or after meter is 5 years old	\$	---- ^f

Footnotes to Commodity Rates and Charges:

- a** Stage 3 and 4 water resource conditions are reached when any combination of build-out, water use, and adjustments to useable CAP allocation causes 80% or 90%, respectively, of the total useable CAP allocation to be used (see Policies & Procedures).
- b** Charges apply to standard installations only. Extra charges may apply to non-standard installations. Charges are non-refundable.
- c** Number of months off system times the monthly minimum as described in Arizona Administrative Code (A.A.C.) R14-2-403(D)
- d** Calculated per Arizona Revised Statute (A.R.S.) §48-910(G)
- e** \$50.00 plus cost of the bench test
- f** Charged on time and materials basis

B. One-Time Facilities Infrastructure Fee

Each new service connection shall pay the total one-time, non-refundable facilities infrastructure fee, derived from the following schedule:

ONE-TIME FACILITIES INFRASTRUCTURE FEE SCHEDULE			
(Non-refundable)			
Meter Size (inches)	NARUC Mater Factor	Total Fee	
5/8 (includes 5/8 x 3/4)	1	\$	4,000
3/4	1.5	\$	4,500
1	2.5	\$	7,500

1. Assessment of One-Time Infrastructure Fee: The infrastructure fee may be assessed only once per service connection, or lot within a platted subdivision. However, this provision does not exempt from the infrastructure fee any newly created parcels, which are a result of further subdivision of a lot or land parcel and which do not have a service connection.
2. Time of Payment:
 - In the event that the Applicant is required to enter into a main extension agreement, whereby the Applicant agrees to advance the costs of installing mains, valves, fittings, hydrants and other on-site improvements in order to extend service as described in A.A.C. R14-2-406(B), payment of the charges required hereunder shall be made by the Applicant within 15 calendar days after receipt of notice of approval from the THDWID.
 - In the event that the Applicant is not required to enter into a main extension agreement, the charges hereunder shall be due and payable at the time the meter and service line installation fee is due and payable.

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Water Customer Responsibilities

Establishment of Service

Establishment of service shall be made only when the Customer's facilities are ready and accepted by the THDWID, and the THDWID needs only to install or read a meter, or turn the service on. Customers should review the THDWID New Build/Remodel Water Considerations published in the Governance section of the Tonto Hills website and in the Policies and Procedures.

The Customer's water lines or piping shall be installed in such a manner as to prevent cross-connection or backflow. Pressure vacuum breakers must be installed on all hose bibs used to fill water reservoirs, such as horse troughs, pools, etc., to prevent backflow. Residential backflow prevention devices shall be installed wherever cross-connections pose a threat to the THDWID water system, in accordance with the THDWID Policies and Procedures. THDWID will install a check valve with new water meters as a precaution; however, this action does not relieve Customer from any backflow prevention requirements for its property. THDWID may, at its sole discretion, install check valves at existing water meters. ***A Reduced Pressure Principle (RP) Backflow Prevention Assembly is mandatory for all parcels zoned commercial (see Policies and Procedures).***

NOTE: Contractors can be provided access to THDWID water for construction purposes. The THDWID Superintendent can provide access to a standpipe and a temporary meter for recording water use.

All pools must be equipped with pool covers. Negative edge pools must be equipped with automatic pool covers.

THDWID Members requesting connections on their parcels to the THDWID's water system shall grant to the THDWID all easements and rights-of-way required by the THDWID to provide water service to, across, or on the parcel for which the connection is being sought. Any failure to grant adequate easement and right-of-way shall be grounds for the THDWID to refuse connection and/or service to the requesting THDWID Member.

After initial installations and improvements, all THDWID Members agree to give THDWID representatives access across or on the parcel for any legitimate THDWID business.

Applicants for service shall be responsible for the cost of installing all piping from the meter outlet. It shall be unlawful for any person or entity to hook up to the water line or lines of any portion of the THDWID's water system unless and until the THDWID Superintendent has approved the

application for service submitted by said person or entity. The THDWID may install its meter in the utility right-of-way along the roadside and will not be responsible for obtaining easements for private water lines.

Where the meter or service line location on the Customer's premises is changed at the request of the Customer or due to alterations on the Customer's premises, the Customer shall provide and have installed at Customer's expense all piping necessary for relocating the meters; and the THDWID may charge a fee for moving the meter and/or service line.

THDWID and its authorized employees or agents shall have the right to enter the parcel for purposes of verifying compliance with all THDWID requirements.

Other Customer Responsibilities

In addition to those responsibilities listed in the Establishment of Service section, following is a listing of some, but not all, Customer responsibilities:

1. Each Customer shall be responsible for paying all fees, rates, and charges invoiced by THDWID. This responsibility cannot be assigned to renters. This includes water used by fire departments to suppress fires on the parcel.
2. Each Customer's piping and apparatus shall be installed and maintained by the Customer, at the Customer's sole cost and expense, in a safe and efficient manner and in accordance with the THDWID Policies and Procedures and in full compliance with the regulations of the Arizona State Health Department, Arizona Department of Environmental Quality, Maricopa County, and the Uniform Plumbing Code.
3. Each Customer shall be responsible for maintaining all facilities on the Customer's side of the point of delivery in a safe and efficient manner and in accordance with the rules of properly constituted authority.
4. If each Customer's piping is so arranged that the THDWID is called upon to install a second meter, this additional service to the Customer's parcel will be considered as a separate and individual billing account.
5. Each Customer shall be responsible for safeguarding all THDWID property installed in, under, or on the Customer's premises for the purpose of supplying water to that Customer, and shall permit access to it by the authorized representatives of THDWID. Duly authorized employees or agents of THDWID shall have access at all reasonable hours to the parcel for the purpose of installing or removing the THDWID's property, inspecting piping, or for any other purpose in connection with the THDWID's services and facilities.

6. As part of the responsibility to provide proper access, each Customer shall keep a sufficient area around the water meter clear of vegetation or other objects that may hinder the meter reader from easily and safely accessing Customer's meter.
7. Each Customer shall exercise all reasonable care to prevent loss or damage to THDWID property, excluding ordinary wear and tear. In the event that any loss or damage to the property of the THDWID or any accident or injury to persons or property is caused by or results from the negligence or wrongful act of the Customer, its agents, employees, guests, tenants, or other representatives, the cost of necessary repairs or replacements shall be paid by the Customer to the THDWID and any liability otherwise resulting shall be assumed by the Customer.
8. Each Customer shall be responsible for payment for any equipment damage and penalties resulting from unauthorized breaking of seals and/or from interfering, tampering, vandalizing, or bypassing the THDWID meter.
9. Each Customer shall be responsible for notifying the THDWID of any failure of the THDWID's equipment.
10. Each Customer shall be responsible to ensure that water furnished by the THDWID shall be used only on the Customer's premises and shall not be resold to any other person.
11. During Critical Water Conditions, as determined by the THDWID Board or other appropriate governmental authority, the THDWID may restrict water use and the Customer shall use water only for those purposes specified by the THDWID. The Customer shall use water only for those purposes specified for the water restriction levels set forth in the Water Conservation Plan. Critical Water Conditions are Stages 3 and 4. See the appendix to the Policies and Procedures.
12. Each Customer is responsible to be aware of information provided regarding local water conditions and water restrictions. Disregard for this rule by the Customer, its guests, tenants, employees, or other authorized parties shall be sufficient cause for THDWID's refusal or discontinuance of service to the parcel.
13. Each Customer is responsible to ensure that water furnished by the THDWID is to be used only within the boundaries of a Customer's parcel. Any Abusive Water Use as defined in the Policies and Procedures by any Customer is strictly prohibited. Abusive Water Use shall be sufficient cause for the THDWID's refusal or discontinuance of service to the parcel.
14. Each Customer is responsible to report any water leaks immediately, to the THDWID Superintendent.
15. Customers seeking to have their water service temporarily disconnected (turned off) for construction maintenance or repair purposes may contact the THDWID for this service. Turn-on/turn-off fees may be charged to Customers that have a temporary disconnect and re-connect.
16. Complaints must be filed at the THDWID principal office by setting forth the complaint in a written statement by the Customer or its authorized representative or agent. The complaint will

be answered by the THDWID or its authorized representatives, including its legal counsel if deemed necessary by the Board, as soon as possible within a maximum of sixty-five (65) days from the THDWID's receipt of the complaint.

17. The Customer and its agents, family, or tenants shall not allow any pollutants and contaminants to enter the public potable water system from the point of delivery to the public potable water system. The Customer, at its own expense, shall install, operate, test, and maintain approved backflow preventive assemblies as directed by the THDWID. The customer is responsible for having the back-flow prevention device periodically tested by a back-flow assembly tester in accordance with manufacturers' specifications.
18. By no later than 15 days prior to a change in Parcel ownership, the Customer shall provide the THDWID with written notice to discontinue service and to indicate a change of Parcel owner. At such time as a Customer relinquishes title or ownership of a Parcel, then he or she shall no longer be a THDWID Member and shall no longer have the voting privileges, duties, or obligations of a THDWID Member with respect to the Parcel so relinquished.
19. The THDWID Member shall be responsible for all water charges associated with the THDWID Member's Parcel up to the time of closing sale to a new owner.
20. Nothing shall prohibit the THDWID from collecting amounts owed for water services by any former THDWID Member after the former THDWID Member has relinquished title or ownership of a Parcel.
21. The Parcel Owner shall notify THDWID whenever tenants who are paying water service bills change and shall provide new tenant contact information. The Parcel Owner shall notify new tenant of THDWID policies and procedures.

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THDWID New Build/Remodel Water Considerations

Tonto Hills Utility Company (THUC) acquired a water allocation of 71 acre-feet per year (AF/yr) from the Central Arizona Water Conservation District (CAWCD) via the Central Arizona Project (CAP) canal and brought it online in March 2004. This allocation was one of the assets purchased by the Tonto Hills Domestic Water Improvement District (THDWID) in December 2010. Currently, the CAP supply is the only feasible long-term source of water for Tonto Hills.

In accordance with our state-required Conservation Plan, the THDWID Board is preparing for unforeseen interruptions in CAP water supply by banking our unused CAP allocation at a Groundwater Savings Facility and obtaining long-term storage credits against which Scottsdale can pump groundwater in lieu of CAP water to temporarily continue meeting our needs, if necessary.

It must be strongly emphasized that our water supply is secure and the likelihood of a shortage is low. We estimate our current supplies could support an average monthly use of about 8,000 gallons per parcel at full build out. The fact remains that our supply is based on an allocation system that does not provide unlimited water to our community. Therefore, it is important to recognize this limitation and that excessive water use by THDWID members can impact the sustainability of our water supply.

To lessen the likelihood of a shortage, the THDWID Board of Directors has adopted the following recommendations and requirements for new build and applicable remodel applicants. Please note that for **all parcels zoned commercial**, THDWID has adopted a policy of **mandatory Reduced Pressure Principle (RP) Backflow Prevention Assemblies** to be installed and tested prior to occupancy (see Policies and Procedures).

Following are recommendations:

- **TOILETS:** Toilets should be the high efficiency type that uses 1.6 gallons or less per flush. A family of four can save 14,000 to 25,000 gallons of water per year using these as opposed to the older type of toilets.
- **SHOWERHEADS:** Showerheads should be of the high efficiency type with a flow rate of 2.5 gallons per minute or less. Showering typically accounts for approximately 17% of indoor water use. The high efficiency showerheads can achieve water savings of 25% to 60% over older models.
- **FAUCETS:** Consider using faucets with the “WaterSense” label. Faucets typically account for about 15% of indoor water use. “WaterSense” bathroom sink faucets can reduce water flow by

30% without sacrificing performance. “WaterSense” is an EPA program having partnership agreements with many manufacturers.

- **DISHWASHERS:** Consider installing an “EnergyStar” qualified model. An old style dishwasher can waste about 10 gallons of water per cycle.
- **CLOTHES WASHERS:** Consider installing an “EnergyStar” qualified model. High efficiency washers use 35% to 50% less water and 50% less energy per load. The model should also have a low water factor. A water factor is the number of gallons per cycle per cubic foot that a clothes washer uses. If a washer uses 18 gallons per cycle and has a tub volume of 3.0 cubic feet, the water factor is 6.0. The lower the water factor, the more efficient the washer. Some models have load sensing capability and adjust the amount of water used based on the size of the load.
- **OUTDOOR PIPES:** Tonto Hills experiences freezing weather a few times per year. This can result in burst pipes and many gallons of wasted water. Consider insulating pipes. Use heat tape or thermostatically controlled heat cables to wrap pipes. (Use products approved by Underwriters Laboratories and follow instructions carefully.) Also, seal leaks that allow cold air to enter where pipes are located. Look for air leaks around electrical wiring, dryer vents, and pipes.
- **LANDSCAPING:** Consider landscaping with low-water requirement desert plants. Go to http://www.amwua.org/advanced_search.html for an appropriate desert plant search engine. Turf or grass planting should not exceed 25 square feet. Consider equipping drip systems with rain shut-off devices or soil moisture sensors. Consider decorative rain barrels to catch rain for landscape watering. These barrels are available for around \$100.
- **ON-DEMAND HOT WATER:** A family of four wastes 10,000 to 15,000 gallons of water annually running faucets while waiting for hot water. There are several types of on-demand hot water systems including: recirculating pumps, demand type pump systems, thermo-siphon systems, and point-of-use water heaters. The downsides of these systems are initial costs and on-going energy costs. To minimize ongoing energy costs, insulate all pipes and install a timer to turn the systems on/off tied to showering hours. Another consideration is a tank-less water heater running on propane located near the primary shower or a small capacity 110-volt electric under sink water heater.
- **HUMIDIFIERS:** Many new homes are built with humidifier systems as part the HVAC system. The two types of humidifiers available are evaporative and steam. The model of evaporative humidifier varies depending on the size of the house. (Consider cubic feet measurements if ceilings are high.) These humidifiers can use from 3 gallons per hour (gph) to 6 gph. If a 6-gph humidifier ran constantly, it could use 4,320 gallons in a month. Many factors impact actual usage, but assuming it ran about 6 hours per day; the monthly total would be 1,080 gallons. For each gallon used in humidifying, 5 gallons go down the drain. To ensure the unit runs only when needed, install a digital humidistat. Steam humidifiers use only 0.6 to 1.8 gph with very little

going down the drain. The downside is that they use 11.5 amps vs. less than 1 amp for a large evaporative humidifier.

Following are requirements:

- **SHUT-OFF VALVES:** All THDWID Members who have or request connection to the THDWID's system shall install and maintain a private shut-off valve. The THDWID shall provide a like valve on the THDWID's side of such meter. The THDWID also recommends the installation of one or more pressure reducing valves (PRVs) on the Customer's side of the meter at the Customer's expense to regulate water pressure and prevent over-pressure damage to appliances and other equipment. The THDWID shall not be responsible for the effects of high water pressure on the Customer's side of the meter. The THDWID requires backflow prevention devices.
- **POOL COVERS:** A 600-square-foot pool has approximately 34,000 gallons of water evaporation each year. This figure can vary depending on humidity (low humidity means higher evaporation), air temperature vs. pool temperature (the cooler the air in relation to the pool, the more evaporation), solar exposure, and wind. A pool cover can prevent most of this evaporative water loss. A low-cost pool cover is a solar cover. They look similar to packing material, but have UV inhibitors and a thicker grade of plastic. There is also a variety of vinyl covers. Pool covers come with manual, semi-automatic, or automatic pool cover retraction. As of 2014, a basic cover for a 450-square-foot pool costs about \$80; a storage reel costs about \$160. A high quality insulating pool blanket costs about \$700. A pool cover in Phoenix can reduce energy costs by \$2,000 annually and reduce chemical costs.
- **NEGATIVE EDGE POOLS:** Negative edge pools have higher rates of evaporation than regular pools and standard pool covers are less effective. Negative edge pools are not permitted unless an automatic pool cover designed specifically for this type of pool is built-in as part of the construction.
- **BACKFLOW:** The complete backflow prevention requirements for all members are available in the THDWID Policies and Procedures. The following is a brief summary:

A.A.C. R18-4-215 E1, which states, "A public water system may make installation of a required backflow prevention assembly a condition of service. A user's failure to comply with this requirement shall be sufficient cause for the public water system to terminate water service." The THDWID has adopted a policy requiring installation of backflow prevention assemblies as a condition of initial and continued water service where cross-connections pose a potential threat to the THDWID water system.

As mentioned earlier, the THDWID has adopted a policy of *mandatory Reduced Pressure Principle (RP) Backflow Prevention Assemblies for all parcels in the District zoned commercial* to be installed and tested prior to occupancy (see Policies and Procedures).

The THDWID requires that residences and commercial properties be in compliance with Section P2902.1 of the International Residential Code for One- and Two-Family Dwellings. Section P2902.1 states, “A potable water supply system shall be designed and installed as to prevent contamination from non-potable liquids, solids, or gases being introduced into the potable water supply. Connections shall not be made to a potable water supply in a manner that could contaminate the water supply or provide a cross-connection between the supply and a source of contamination unless an approved backflow prevention device is provided. Cross-connections between an individual water supply and a potable water supply shall be prohibited.”

THDWID also requires pressure vacuum breakers on all hose bibs used to fill water reservoirs, such as horse troughs, etc., to prevent backflow. Backflow prevention devices should be inspected annually.

The following are the recognized types of backflow prevention assemblies that the THDWID requires (see Policies and Procedures for details):

- 1) *Air gap*: The unobstructed vertical distance through free atmosphere between the lowest point of a water supply outlet, pipe, or faucet supplying potable water to a tank, plumbing fixture, or other device and the flood level rim of the tank, plumbing fixture, or other device. An approved air gap shall be at least twice the diameter of the supply pipe or faucet and in no case less than one (1) inch.
- 2) *Reduced pressure principle assembly (“RP”)*: A backflow prevention assembly containing two independently-acting approved check valves together with a hydraulically-operating, mechanically-independent pressure differential relief valve located between the check valves, and at the same time below the first check valve. The assembly shall include properly located test cocks and tightly closing shutoff valves at each end of the assembly.
- 3) *Double check valve assembly (“DC”)*: A backflow prevention assembly composed of two independently-acting, approved check valves, including tightly-closing shutoff valves located at each end of the assembly and fitted with properly located test cocks.
- 4) *Pressure vacuum breaker assembly (“PVB”)*: A backflow prevention assembly containing an independently-operating, loaded check valve and an independently-operating, loaded air inlet valve located on the discharge side of the check valve. The assembly shall be equipped with properly located test cocks and tightly-closing shutoff valves located at each end of the assembly.