



IVGID PUBLIC WORKS · 1220 SWEETWATER ROAD · INCLINE VILLAGE NV 89451
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Introduction to IVGID Public Works

The Incline Village General Improvement District (IVGID) Public Works Department provides water and sewer services, as well as management of the solid waste contract, to the 8,106 residential and commercial users located within Incline Village and Crystal Bay. Trash collection is provided by Waste Management Inc. (dba Incline Sanitation) through a franchise agreement.

It is a great responsibility to provide clean and safe drinking water to all of our residents and visitors. The Nevada Department of Environmental Protection (NDEP) regulates our drinking water system through authority by the EPA under the Safe Drinking Water Act and its amendments.

The collection and treatment of wastewater is equally important in protecting the public health and safety of our residents and visitors. There is a higher level of responsibility because we are located in the Lake Tahoe Basin. In addition the District must operate and maintain a complex effluent export system to send all of our treated wastewater out of the Lake Tahoe Basin to meet these regulatory requirements. The NDEP is the regulating authority of IVGID for the collection and treatment of wastewater under the Clean Water Act and its amendments.

The Public Works Department takes responsibility of providing clean and safe drinking water and the collection and treatment of sewage very seriously and is evidenced by our highly skilled staff, well maintained infrastructure, excellent customer service and our secure financial position. It is the employees that make the difference and the high performance culture has been carried forward through changes in staff and leadership.

In order to treat and supply an average of 1 Billion Gallons of water annually our Water Infrastructure Assets include:

- A UV & Ozone Water Treatment Plant able to treat up to 8.5 million gallons daily
- 100 Miles of Water Mains between 4" to 24"
- 753 Fire Hydrants, 12 IVGID Fire Hydrants and 106 Private Fire Hydrants
- 2,031 Gate Valves
- 13 Water Tanks with 7 Million Gallons of Storage
- 13 Water Pumping Stations with 26 Pressure Zones
- Service connections to over 4,440 Water Meters

Total Water Infrastructure Replacement Value: \$275,000,000

In order to treat an average of 474 Million Gallons of sewage annually our Sewer Infrastructure Assets include:

- 105 Miles of Gravity Lines and 14 Miles of Sewer Force Main between 6" to 24"
- 1,926 Sewer Manholes
- 20 Sewer Pump Stations
- A wastewater treatment plant able to treat up to 2.1 million gallons daily
- 20 Miles of Effluent Pipeline to Carson Valley
- A 900 acre wetland site located in the Carson Valley for effluent water

Total Sewer Infrastructure Replacement Value: \$325,000,000

Total assessed value of water and sewer infrastructure: \$113,474,000 (2014 IVGID Audit Report)

PUBLIC WORKS FAQ'S

In case of a water or sewer emergency please call (775) 832-1203, 24 hours a day.

Please contact our office to make sure we have current contact information on file in case we need to contact you about a water leak or other water or sewer emergency at your property.

IVGID Public Works

Customer Service and Billing: (775) 832-1203, Email: pw@ivgid.org

Backflow Inspections: (775) 832-1313 or click "Backflow Scheduling" at www.ivgidpublicworks.org

IVGID Permit Inspections: (775) 832-1224 or click "Backflow Scheduling" at www.ivgidpublicworks.org

Waste Not: (775) 832-1284, Email: wastenot@ivgid.org

Location: 1220 Sweetwater Rd, Incline Village NV 89451

Office hours: Monday-Friday 8:00 am to 4:30 pm

Website: www.ivgidpublicworks.org

HHW & E-waste Drop-off Hours: To schedule an appointment 48 hours in advance: Visit: WWW.IVGIDHHW.COM, email: wastenot@ivgid.org or call: (775)832-1284

Waste Management

Phone: (775) 831-2971

Location: 1200 Sweetwater Rd, Incline Village NV 89451

Office hours: Monday-Friday 8:30 am to 5:00 pm, closed 1-1:30 pm for lunch

Email: inclinevillage@wm.com

Website: inclinevillage.wm.com

Ordinances for Trash, Sewer and Water are available for viewing at our office or online at: www.yourtahoepace.com/public-works/about-public-works/public-works-ordinances

Monthly we mail an informative newsletter with your bill that has current public works information. Archives are available online at: www.yourtahoepace.com/public-works/about-public-works/forms-documents

WATER FAQ'S

Where does our water come from?

The source of your drinking water is Lake Tahoe. Pumped directly out of the lake, your drinking water is first disinfected with our state-of-the-art ozone and ultraviolet disinfection. A small dose of chlorine is added prior to your water being distributed through water pump stations to water storage tanks, and then travels through pipelines to be delivered to your property.

What should I do to winterize my property?

It is recommended that all properties have a Customer Service Valve (CSV), installed past the water meter that is easy to access. If you are leaving the property for a period of time, turn the CSV off to stop the water supply to the house. You may want to check with a licensed contractor to verify any additional systems hooked up to your water supply will function properly once the CSV is shut-off. If you do not have a CSV seasonal water turn off requests can be made by contacting our office. There is a service call charge, at the time the meter is turned off and this request requires 48-hours notice. A fine for meter tampering may be charged if the meter is turned on/off without a service call. It is the homeowner's responsibility to make sure the meter is accessible or additional charges may be incurred to get access to the meter. It is also important to leave the thermostat at 55° when you are away to prevent freezing of internal pipes. Don't run the water in order to keep pipes from freezing. This is a costly waste of water and can cause water damage under certain circumstances. On irrigation systems it is important to shut off and drain the system, detach hoses from hose bibbs and remove backflow devices and store them inside.

How do I locate and read my meter?

Your water meter is generally near the street at the corner of the lot marked with a metal fence post with blue paint. The meter is under a metal or concrete lid. Brush away any soil or dirt before you remove the lid and please take great care in not damaging the meter, transmitter or associated wires. The water meter register has a black protective dust cover which you will need to flip back to read the meter. Water meters have numbers and spinning dials, which record usage. When water is not being used, none of the numbers or dials on the meter should move. Our meters have a small red star wheel "the leak detector" which spins to indicate when water is traveling thru the meter. If you are not sure you are looking at the correct meter simply run a hose bibb at your house to verify the meter is yours.



Water Meter Register

How do I know if my meter is accurate?

Today's modern meters are extremely accurate. Most meter inaccuracies are due to age and wear and yield a reading that is less than what was actually used. You can also check your meter accuracy by simply running water until your meter pointer is at zero. Then, insuring that nothing else is using water in the house, accurately fill a one or two gallon container and return to your meter to see if the pointer moved the appropriate amount. Each number on the clock face of the meter dial represents one gallon. If you accurately dispensed one gallon, the pointer should have incremented by approximately one gallon.

Why am I responsible for keeping my meter box accessible?

Meter boxes need to be accessible at all times in case of an emergency at your property or for any other reason in which the meter needs to be shut-off or for meter maintenance. Make sure that snow, dirt, rocks, vehicles, etc. are not covering your meter box. This could save your property from costly water or sewer damage. If we are required to uncover your meter box additional charges may be assessed to your utility bill.

Am I required to have a meter stake at my property?

Yes, having a meter stake at your meter location will aid us in locating the meter in case of an emergency at your property, especially when there is accumulation of snowfall or pine needles. Call us if the stake is missing, we will replace it.

Who is allowed to turn my water meter on or off?

In order to avoid damage to the meter and its components, as well as your home, only trained IVGID personnel are allowed to turn the meter valves. It is recommended that all properties have a Customer Service Valve (CSV) installed past the water meter that is easy to access so that customers can turn off their own water. If a meter is found to have been turned on/off by someone other than IVGID trained personnel a \$100 tampering fine may be assessed to the utility bill.

I think I may have a water leak at my property. Where do I start?

The most common leak inside a home is caused by toilets. We have dye tablets available at our office which can help you to identify if you have a leaking toilet. We also have informational flyers available to help you locate and fix water leaks. Also, if you sign up for an Online Account you will receive an email after we read meters once a month if your meter showed 24 hours of water use the day we read your meter. Information is available online or by contacting our office.

The water pressure to my property is low. What could cause this?

The water pressure to your property can vary depending on your location. All homes should have water pressure regulators which are placed on the service line to regulate the water pressure to the house so that plumbing fixtures operate properly. If you have low water pressure you may need to adjust or replace this device or call a plumber for further assistance.

WATER QUALITY FAQ's

How can I find out about our water quality?

Each June a comprehensive Consumer Confidence Report (CCR) on the water quality of the system is published and sent to all customers and is posted on our website. This is in compliance with Federal EPA reporting requirements.

Why should I choose tap water over bottled water?

Water systems are more rigorously tested and monitored than the bottled water industry. Americans are drinking a lot of bottled water: 8.3 billion gallons annually, about 26 gallons per person (in 2006). About 86% of the plastic bottles in the U.S. go to the landfill instead of being recycled. Tap water costs less than a penny per gallon and we are fortunate to have some of the finest drinking water in the world!

Is chlorine used in the water?

Yes, chlorine is used in the water to make sure it stays disinfected while it travels through the water infrastructure to your property. Chlorine will dissipate over time with exposure to air and can also be removed from the water with the use of a carbon water filter.

Do you put fluoride into the water?

No, we do not add fluoride into the treated potable water.

WATER CONSERVATION FAQ's

How do I know how much water I am using?

Your monthly bill will show you how much water was used during the previous month, as well as your use over the past 12 month period. Meter reads are collected once a month.

I would like to monitor my water use. How can I do this?

Your monthly utility bill will indicate your last meter read and the date of the read. Then you will need to locate your water meter as detailed in the Water FAQ's section. When you have your current meter read you can then subtract the read from your last bill from the current meter read to find out how much water you have used over that period of time. The District also offers the use of a remote reading device that we can lend to you at no cost for up to two weeks. The device is programmed to read your meter by radio and can be placed somewhere in your house or garage in a convenient location. You can retrieve your meter reads as often as you like without having to access your water box. The District will program, deliver and set up the device for you. If you wish to keep the monitor after the rental period we will simply bill your account \$100 for the cost of the device.

How much water use is normal indoors?

According to the American Water Works Association, before implementing basic water conservation techniques, the average indoor use is approximately 60 to 70 gallons per day per person. That translates into approximately 3,600 to 4,200 gallons per month for two people or 7,200 to 8,400 gallons per month for a family of four. Simple conservation measures can typically result in a 15-20 percent reduction in this number.

How can I tell if I am overwatering my landscaping?

Irrigation audits are available for customers who feel their irrigation water use is higher than it needs to be. This can be scheduled by contacting our Waste Not department, (775)832-1284.

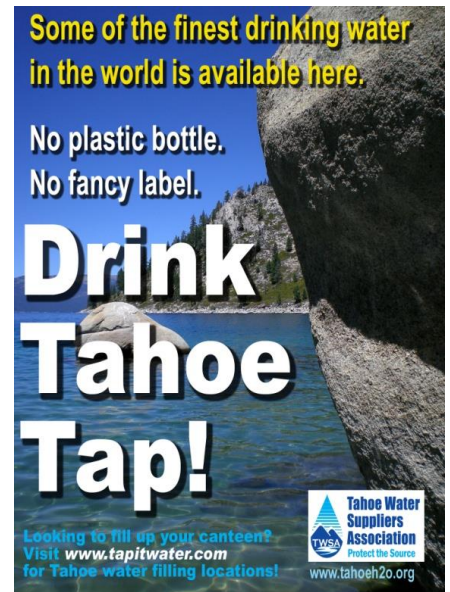
Where can I find some assistance with development of a water conserving landscaping plan?

A fabulous resource for learning about water conservation strategies is the UNR Cooperative Extension publication located at: www.unce.unr.edu/publications/files/nr/2006/eb0601.pdf. The North Lake Tahoe Demonstration Garden is also another great resource, which is located on the Sierra Nevada College campus.

BACKFLOW FAQ's

Why is backflow testing required?

Your property's main waterline supplies drinking water to your house. This pipe also supplies water for alternative uses such as boiler, fire and irrigation systems; which are cross connections. Glycol, fertilizer, waste, and gas can be found in these alternative pipes. If pressure is reduced in your main waterline, the polluted water in the alternative systems can flow backwards and contaminate your drinking water. A backflow device prevents water in the alternative lines from flowing backwards, thus protecting your drinking water and your health. The State of Nevada requires backflow devices be inspected annually to make sure they are working properly.



Who needs backflow testing?

Backflow devices are required on non-drinking water systems which are directly connected to the drinking water supply line at a property. These include, but are not limited to: irrigation, boiler (hydronic heat) and fire sprinkler systems. We currently have 3500 backflow devices which are being tested annually in our backflow program.

I received a postcard stating backflow testing is needed. What do I need to do to comply?

Backflow devices need to be tested in the same quarter annually. These can be scheduled online to be tested by IVGID staff members, who are certified backflow testers, at www.ivgidpublicworks.org or by calling (775)832-1313. Backflow test performed by IVGID will be billed on the utility bill charged at the rate set in Exhibit C of the Water Ordinance and includes an hour of labor (when repair to a device is needed). Private certified backflow testers can also perform the test. The form which needs to be completed and submitted with test results is available online or by contacting the IVGID Compliance department (775)832-1224. Results can be emailed to pw@ivgid.org. The inspection needs to be done during the same quarter each year. Backflow results need to be received prior to the end date of the quarter indicated on your postcard. If results are not received the property may be shutoff for non-compliance.

SEWER FAQ's

Where does my sewage go?

Sewage water travels first through pipelines and pump stations to get to the Wastewater Treatment Plant. The wastewater treatment process from start to finish takes approximately 15 hours. The solids removed in this process are sent to an outside company for composting with other organic material. The export pipeline transports the plant's secondary treated effluent to the IVGID Wetlands site in Douglas County for beneficial reuse. All effluent water is required to be transported outside of the Tahoe Basin to protect this national treasure.

What items should not be flushed down the toilet?

Flushable wipes, facial tissue, paper towels, cotton swabs and cotton balls, feminine sanitary products, FOG (fats, oils or greases), pharmaceutical products, unused medicine, and HHW (household hazardous waste). Toilets are not trashcans!

Why are flushable wipes bad to flush down the toilet?

Flushable wipes don't disintegrate; try pulling and tearing at one or soak one in a cup of water for a day. What you'll find is they don't breakdown. Imagine what happens in your pipes, our sewer mains and sewer pumps. Wipes can clog the connection to the sewer line causing backups resulting in expensive repairs for the homeowners and/or cause back-ups that spill sewage into our fragile mountain environment.



What problems can be caused by fats, oils and greases (FOG) being put down the drain?

If you dump leftover food scraps, oils and grease down the drain, the greases and fats stick to the inside of the pipes. Grease causes sewer blockages and overflows that damage homes and threaten the environment. The best way to solve grease blockage problems is to keep FOG out of the drain in the first place. These items cause costly preventative maintenance in the sewer mains and pump stations, leading to increased sewer charges.

How do I dispose of pharmaceutical products or unused medicine besides putting them down the drain?

Many drugstores offer a return program on unused medicine. Rite Aid and Safeway in King's Beach both accept medicine; Raley's in Incline Village does not. If you cannot access a recycling option, you may dispose of old medicine in the trash by crushing the pills, placing them back in the original package, place the container in a plastic bag and wrap the bag with tape; then dispose of in your household trash.

BILLING FAQ's

What utility services are included in my IVGID bill?

Water and sewer charges are billed by IVGID Public Works. Trash accounts are billed directly by Waste Management.

How often are bills generated and what are the payment due dates?

Water and sewer utility bills are generated monthly. Payments are due by the 15th of each month, or the following business day if this date falls on a weekend. Payments made after this date will not be reflected on your next statement.

Residential trash accounts are billed quarterly and commercial trash accounts are billed monthly.

How can payments be made on accounts and where are payment drop-off locations?

Payments for Public Works accounts can be made by: Check, Money Order, Cash, FREE monthly Automatic Payment (EFT) from a checking account, thru online bill payment with your bank, or via our Online Account Access (will be subject to a service fee). There is also a 24 hour drop box is located at the IVGID Admin office at 893 Southwood Blvd. Payments can also be made at the Public Works office during business hours, which is located at 1220 Sweetwater Rd.

What forms of payment are accepted with Online Account Access and what are the service fees?

Payment can be made by eCheck or with a Visa, MasterCard or Discover credit card. EChecks will be charged a flat rate of \$1.50 per transaction and credit cards will be charged a service fee of 2.45% with a \$2.00 minimum transaction amount.

Why is there a service fee when paying with Online Account Access?

The payment processor and your credit card collect these fees. IVGID does not collect this fee or any of the revenue.

Can I make a one-time payment by credit card without setting up for an Online Account Access account?

Yes! On the login page click the "Guest Payment" link. You will need to enter the account number exactly as it appears on the statement (including dashes). You will then need to verify the correct information is displayed for the account you wish to pay and then specify the amount of payment you would like to make. A service fee will apply for online payments.

How does EFT/auto-payment work and what is needed to sign up?

EFT will automatically transfer payments from your checking account on the date indicated on the statement. A copy of the bill is still mailed to you in order for you to have the information on the payment amount which will be deducted from your account and shows the amount of water use at the property. The form needs to be completed, signed and returned to our office with a voided check in order to set-up this payment option.

How do I make changes to the mailing address or contact phone numbers on my account?

Changes to contact information can be made via Online Account Access or the Change of Address form is available online. You can also make changes by submitting the information on the payment stub which is mailed in with your payment.

I am past due on the payment of my utility bill. When will a late charge be accessed?

Late fees are assessed if payment is not received by the last day of the month.

My property was posted for shutoff due to non-payment. What does the notification mean?

Properties which are posted for shutoff have two months of outstanding balance which has not been received by the time billing had been generated for the next billing period. A minimum of five calendar days are given to make the payment. Please contact our office if you need to make arrangements for payment towards a past due balance on your account.

I would like to set up an agent/tenant to receive the bill on my account. What is needed to arrange this?

When this option is used the owner acknowledges that all invoices, delinquency notices, shut off notices, inspection notices, and other correspondence for the utility account will be sent to the agent/tenant's mailing address. For this reason we suggest that property owners call or email us periodically to verify status of the payments on the account. The owner of the property will still be responsible for any charges left unpaid. IVGID does not prorate any charges on the account upon move in or move out, but we are able to provide date ranges for the timeframe charges were incurred on the utility account. The Designation of Agent/Tenant form is available online or by contacting our office.

How are water and sewer billing rates determined?

A rate study is performed anytime water and sewer rates need to be evaluated for change. Base rates are determined off of the cost of operation, maintenance, repair, and administration costs. Details from the most recent rate study are found in the Water and Sewer Rate Study section of this packet. Capital charges are collected to fund the replacement of infrastructure and assets in the District. Water tier rates are in place to encourage water conservation and cover any costs associated with having to increase the water rights held by the District. Our annual Water Management Plan is a reporting requirement to the State of Nevada and details the water consumption in the District. A copy of this report is available by contacting our office.

What does the Defensible Space Fee pay for?

The Defensible Space Fee pays for the work IVGID does on its property to manage the watershed and reduce fire fuel loads. This work also provides a protective boundary for the homes of Incline Village and Crystal Bay from the potential destruction caused by wildfires. The Fuels Management Program began in 1991 in a collaboration of the NLTFPD and IVGID. Annually approximately \$450,000 to \$500,000 is spent to maintain the 900+ acres of land IVGID owns. The defensible space fee on the Public Works statement pays for 50% of the IVGID share of costs for fuels treatment. The other 50% share of this cost is paid by the IVGID Recreation Facility Fee. The Angora Fire in South Lake Tahoe and wild fires in other mountain regions continue to remind us of the significance of this effort in our community.

WILDLIFE FAQ's

How do I report a trash problem?

If you see an open/overfilled dumpster, trash spill or trash out before the service day, please email solidwaste@ivgid.org with the address, date/time, and picture of the incident or submit your request via Talk2IVGID online or the phone app.

How can I keep bears/wildlife from getting into my trash?

The best way to keep bears and other wildlife out of your trash is to keep your refuse in a bear-proof garbage container at all times. These must be purchased by the resident. There are two kinds of bear-proof garbage containers – bear sheds and wildlife resistant carts. Bear boxes are permanent steel boxes installed on a concrete base that can hold from one to three cans of garbage. Wildlife resistant carts are steel reinforced garbage containers on wheels with a latching system. For more information on either of these options contact Waste Not. More information can also be found at www.stashyourtrash.org. Many people keep trash in the garage until the day of pick up. Be advised, bears have broken into garages in our community in pursuit of food waste. Place trash curbside after 5 AM on day of service only.

HOUSEHOLD HAZARDOUS WASTE (HHW) & ELECTRONIC WASTE (E-WASTE) FAQ'S

Where do I take Household Hazardous Waste (HHW)?

Waste Not accepts HHW for District residents at our Public Works site 1220 Sweetwater, Incline Village during our scheduled drop-off hours or an appointment can be made by calling (775)832-1284 48 hours in advance. This program accepts: acids, aerosols, batteries, fluorescent light bulbs, household cleaners, fertilizers, pesticides, flammable liquids, herbicides, poisons, solvents, gasoline, oil paints and stains. Latex paint is now accepted. Waste Not cannot accept HHW from commercial customers. Commercial customers may call a commercial hazardous waste disposal service. We will refuse potentially dangerous or unlawful substances. Please contact us for current program details.

Where can I take computers and electronics to be recycled?

Waste Not accepts electronic waste for District residents. Items accepted include flat screen monitors, towers, laptops, accessories (including cables), stereos, and most small appliances with cords or batteries.

What about those "hard to recycle" items? How do I get more information on recycling?

Waste Not maintains a comprehensive recycling guide which is available by calling (775)832-1284, or visiting our website.

WATER AND SEWER BUILDING COMPLIANCE FAQ'S

I am planning a construction, remodel or landscaping project. Where do I start?

Contact the Washoe County Building and Safety Department, (775) 328-2020 for plan review requirements.

What are the water and sewer requirements for construction?

The requirements for connecting to the water and sewer system are outlined in the IVGID Requirements to Construct Water and Sewer Service Lines packet, which is available online or by contacting our office.

CAPTIAL INFASTRUCTURE PROJECTS (CIP) FAQ's

How can I find out information on IVGID CIP projects which are occurring around town?

Information on the IVGID projects are available online at: www.ivgid.org/community_resources/construction. The webpage also contains links to project information for Washoe County and NDOT projects.

Water and Sewer Rate Study

As presented by Memorandum to the IVGID Board of Trustees in January 2019

The Utility Rate Study supports Long Range Principle #2, Finance; The District will ensure fiscal responsibility and sustainability of service capacities by maintaining effective financial policies for operating budgets, fund balances, capital improvement and debt management. Under Objectives for 2018-20, it specifically states, Prepare a five-year projection of financial results for each audited fund for operations, capital improvement and debt service as a part of budget deliberations.

FINANCIAL IMPACT AND BUDGET

2019 Five Year Rate Study

The utility rate study for 2019 has been prepared to determine the next five years of operating and capital expenses and to provide sufficient and stable revenue to meet the operating cost increases and the near term capital needs. The analysis is done on a cash flow basis in order to achieve a target reserve fund balance. The reserve fund is set by Board Policy and is currently a target value of \$1.88 million. In the five-year period of this rate study, reserves will be above target policy levels while the District accumulates additional savings to fund the Effluent Export Project.

Funding for capital asset replacement in Public Works is a blend of funds already collected for that purpose in previous years and current year capital revenues. The District also uses borrowing to pay replacement of capital assets to place some of the financial burden on future beneficiaries of the assets. These have been the traditional methods used in paying for capital in Public Works. We are currently using about 15% of the collected capital revenue to pay for debt. In 2012/13 we began payments on the new \$3 million, 20-year State Revolving Fund Loan that financed the Burnt Cedar Water Disinfection Plant Project that renovated our water disinfection facilities to achieve compliance with Federal Regulations. The District has a total of four State Revolving Fund Loans for water and sewer infrastructure.

The rate model is prepared to determine the revenue needs to meet operating and capital expenses while maintaining prudent reserves. Once a revenue target is established, the water and sewer rates are adjusted to generate that revenue in the most equitable way possible. The revenue is also balanced among the various rate components to pay for fixed, variable and capital components. Then the new rate structure is modeled for all of the customer classes and analyzed for equity among the customer classes.

The proposal is to increase water rates by 4.0% and sewer rates by 4.0% for a total utility rate increase of 4.0%. The utility rates are scheduled for an average 3.5% increase for the next five years to meet the projections presented in this memo.

5-Year Look Back to the 2014 Utility Rate Study

In 2014, the five-year utility rate study was presented to the Board with the following information. (Excerpt from Board Memo, February 12, 2014).

The rates are currently scheduled for an average 3.9% increase per year for five years to meet the projections presented here. This is less than last year's projection that rates would increase by 5.2% per year for next five years. The lower projection is because 2013 and 2014 had large sewer rate capital improvement fee increases to continue to raise capital for the \$23 million Effluent Export Project. The sewer rate increase is 11% and 9% respectively in each of those years to generate the capital revenue needed going forward.

Looking back now that the five years are complete the rates increased for all customers by an average of 3.6% per year as compared to the projected 3.9% increase per year. Over five years, the rates actually increased a total of 19.4% compared to the projected increase of 21.1% projected in the 2014 utility rate study. The driver of the rate increases during that period was a balance of wages, service and supplies, and capital cost increases. The rate increase over those 5 years was less than projected because there were costs savings on the expense side including continued savings on electrical costs from gains in efficiency and staff management of pumping during off-peak times.

Utility Rates

The utility rates are being adjusted to meet expected cost increases and to fund future capital replacement. Increasing rates by a constant percentage is a basic concept but it must be verified that in adjusting the rates that no customer class sees a disproportionate change in rates that would unfairly shift the cost burden to other rate payers.

The following table compares the current and the proposed residential water rate. The rates below include a \$1.05 total defensible space charge to each user. The base rate for water is increasing by \$1.25 per month. The water consumption and tier rates have been thoroughly analyzed in previous years to confirm the cost basis for those rate components per thousand gallons of usage.

Residential Water Rate Comparison

2018 Rate Component	2018 Rate	2019 Rate Component	2019 Rate	Change
Base Rate	\$ 11.23	Base Rate	\$ 11.97	\$0.74
Capital Improvements	\$ 14.80	Capital Improvements	\$ 15.10	\$0.30
Customer Account Fee	\$ 3.76	Customer Account Fee	\$ 3.97	\$0.21
Defensible Space	\$ 1.05	Defensible Space	\$ 1.05	-
Monthly Water Bill	\$ 30.84	Monthly Water Bill	\$ 32.09	\$1.25
Consumption	\$ 1.50	Consumption	\$ 1.55	\$0.05
1st Tier	\$ 0.93	1st Tier	\$ 0.96	\$0.03
2nd Tier	\$ 1.30	2nd Tier	\$ 1.34	\$0.04

Consumption, 1st Tier, and 2nd Tier are per 1000 gallons of water use.

The following table compares the current and the proposed residential sewer rate. The base rate for sewer is increasing by \$2.20 per month and the sewer use rate is increasing by \$0.10 per thousand gallons of water use. The sewer use is capped in the summer months for residential customers

Residential Sewer Rate Comparison

2018 Rate Component	2018 Rate	2019 Rate Component	2019 Rate	Change
Base Rate	\$ 18.30	Base Rate	\$ 19.54	\$ 1.24
Capital Improvements	\$ 30.70	Capital Improvements	\$ 31.45	\$ 0.75
Customer Account Fee	\$ 3.76	Customer Account Fee	\$ 3.97	\$ 0.21
Monthly Sewer Bill	\$ 52.76	Monthly Sewer Bill	\$ 54.96	\$ 2.20
Sewer Use Rate	\$ 3.10	Sewer Use Rate	\$ 3.20	\$ 0.10

Sewer Use Rate is per 1000 gallons of use.

Operating Revenues and Expenses

The operating revenue is the portion of revenue generated from the water and sewer rates that is not the CIP charge. The operating revenue is increasing by an average of 4.1% per year for five years and is a blend of rate increases and sales of water and sewer. The information below presents the net income for operating, excluding the capital revenue and the depreciation expense. The rate study goal is to keep a balance between operating expenses and revenues over the five-year period. The variance between operating revenue and expense is within 1.2% and there is a net increase to reserves over 5 years. The rate model is revisited annually and recalibrated with actual financial results from the completed fiscal year. Any budget savings stay in the utility fund to offset future rate increases. The larger variance between revenues and expenses in year 4 and year 5 will be recalibrated to reflect predicted conditions in future years. The estimates are currently straight line based on current expenses and revenues for years 2 through 5.

The operating expenses are the staff costs, services and supplies, utilities, insurance, legal and audit fees, central services expense and the defensible space costs but it does not include depreciation. The 2019-20 values are the proposed Utility Fund budget. Final budget numbers are approved in May by the Board of Trustees. We are budgeting increases in wages and benefits at 4.6%, service and supplies at 3% and utility expenses at 1%. The five-year rate study is presented below for operating revenues and expenses.

5-Year Plan	2019-20	2020-21	2021-22	2022-23	2023-24	5-Yr Sum
Operating Revenue	7,360,000	7,650,000	7,952,000	8,265,000	8,591,000	\$39,818,000
Operating Expense	(7,348,000)	(7,598,000)	(7,856,000)	(8,122,000)	(8,398,000)	(\$39,322,000)
					Subtotal	\$496,000

Capital Revenues and Expenses

The capital revenue is the summation of monthly capital fees collected in the utility rates, connection fees, and interest income and increases by approximately 2.1% per year averaged over 5 years.

The capital expense is the capital improvement projects net of grants and includes debt service. This is the current five-year capital plan that is being developed as part of the budget process. The 2022-23 capital expense is an estimate derived from the previous four years of budgeted capital expense. The year five capital expense estimate will be completed as part of the budgeting process. The five-year capital expenses and revenues are presented in the following table.

5-Year Plan	2019-20	2020-21	2021-22	2022-23	2023-24	5-Yr Sum
Capital Revenue	5,047,000	5,139,000	5,253,000	5,371,000	5,491,000	\$26,301,000
Capital Expense	(4,860,000)	(4,727,000)	(4,885,000)	(4,638,000)	(4,543,000)	(\$23,653,000)
					Subtotal	\$2,648,000

It is important to remember that the capital expenses are budget estimates with further refinement to occur in the CIP budgeting process. The goal of the rate study is to collect sufficient revenues to fund capital expenses over the following five years.

For the 2012-13 through the 2016-17 budget year, the District accumulated \$2,000,000 per year in savings for the construction of the Effluent Export Project. In 2017-18 the District accumulated \$1 million while work was performed on necessary sewer pumping station work. In 2018-19 the District resumed accumulating \$2 million annually for the project. The Effluent Export Project is an on-going project with planning, design and construction costs that have occurred every year since the Phase II project began in 2010-11.

Summary

The proposed utility rate increase is to raise water rates by 4.0% and sewer rates by 4.0% for a total utility rate increase of 4.0%. The rates are currently scheduled for an average 3.5% increase per year for five years to meet the projections presented in this memo.

In 2018-19, total water and sewer revenues for Public Works are budgeted to be \$11.85 million and are proposed to be \$12.29 million in 2019-20 under this rate study. This is an increase in revenues of \$440,000 from increased commodity sales, additional users and from the rate increase.

The reserve balance is a critical fund to be managed in Public Works. The amount of the bonding will be adjusted to insure the reserve fund remains at a prudent balance while also considering the costs of borrowing, the economic conditions in Nevada and the susceptibility of the funds. The contributions to the reserve will be \$3.1 million over the next five years.

2019 Five Year Rate Study	5-Year Total
Operating and Capital Revenue	\$66,119,000
Operating and Capital Expense	\$62,975,000
Net increase in reserves	\$3,114,000

Schedule

The schedule for rate adoption is proposed as follows.

Utility Rate Study	Date
Utility Rate Study Presentation	February 6, 2019
Set Date for Public Hearing to Adopt New Utility Rates	February 6, 2019
Notice of Public Hearing Published in Bonanza Newspaper	March 8, 2019
Courtesy Ad for Public Hearing Published in Bonanza Newspaper	April 5, 2019
Conduct Public Hearing and Adopt New Utility Rates	April 10, 2019
New Utility Rates become effective, pending approval	May 20, 2019

BACKGROUND

Rate Study Fundamentals

The Public Works Department conducts an annual rate study to calculate the appropriate rates for water and sewer service to meet revenue and expense demands while maintaining an appropriate reserve fund balance. The rate study includes a five-year projection for revenues and expenses with an eye out for large capital projects outside of the five-year window. This annual effort insures rates are meeting the needs of the District and that adjustments can be made efficiently and effectively. The rate study is based on utility management strategies and industry best practices that are briefly described below.

Effective Utility Management

In 2006, the Environmental Protection Agency (EPA) worked alongside the six largest water and wastewater professional organizations (American Water Works Association (AWWA), Water Environment Federation (WEF), American Public Works Association (APWA), National Association of Water Agencies, National Association of Clean Water Agencies, Association of Metropolitan Water Agencies) collaboratively to develop a benchmarking document called the "Ten Attributes of Effectively Managed Water Sector Utilities". The major strategies that were identified are as follows:

- Financial Viability
- Product Quality
- Customer Satisfaction
- Employee and Leadership Development
- Operational Optimization
- Operational Resiliency
- Community Sustainability
- Infrastructure Stability
- Stakeholder Understanding
- Support and Water Resource Adequacy

Public Works uses all of these management strategies to maximize our resources, improve performance, and safeguard the community's assets for the future. The primary purpose of our annual rate study is to make sure we utilize the management strategy of financial viability as stated above and more fully described in the next section.

Financial Viability

The water utility sector management strategy defines financial viability as understanding the full life-cycle cost of the utility and establishing and maintaining an effective balance between long-term debt, asset values, operations and maintenance expenditures, and operating revenues. It also establishes predictable rates consistent with community expectations and acceptability to recover costs, provide for reserves, maintain support from bond rating agencies, and plan and invest for future needs.

In other words, the water and sewer rates need to collect revenues equal to the full cost of operations, maintenance and capital replacement of the utility over the long term. This has been dubbed, Full Cost Pricing. Without fully funding a Utility, the value of the community asset will suffer and jeopardize disinfection and the delivery of safe potable water and the collection and treatment of wastewater. Conversely, performing long term financial planning insures that future generations will enjoy the same benefits as customers today in being able to rely on safe potable drinking water and properly collected and treated wastewater to protect the environment. This allows the customer to make personal and economic decisions based on the signaling they receive from the utility rates and system performance.

AWWA Principal of Water Rates, Fees and Charges

The American Water Works Association (AWWA) has 61 Manuals of Practices. The AWWA manual on Principles of Water Rates, Fees and Charges was first written in 1954, and is over 300 pages long covering the detailed practice of setting water rates and charges for a financially viable utility. Manuals such as this are developed by industry experts over decades using the best practices that have been implemented in the industry. This shared knowledge base assists all water agencies in developing and implementing rate structures. It also helps customers when they move from town to town across the United States so they can expect some consistency in how water and sewer services will be charged because of agency acceptance of these best practices.

The District has a long history (25 plus years) of using the principles in this AWWA Manual for determining the type of rate structure that we have to collect the necessary revenues to pay for all costs to operate the water and sewer system. The rate structure used by the District is called the commodity demand method where costs of service are divided into commodity costs, demand costs, customer costs and direct fire protection costs. This is more fully explained under the rate structure section where fixed, variable and capital improvement costs are described. Generally, it is important to know that the rate structure utilized by the District is a best practice supported by the AWWA and is similar to water rate structures across the United States.

Rate Structure

The Public Works budget is comprised of water, sewer, and solid waste funds. Water is further broken down into water supply, pumping, treatment, transmission and compliance services. Sewer is further broken down into effluent disposal, pumping, treatment, collection and compliance. General administration includes billing, meter reading, customer service, legal, lobbying, central services and other utility wide expenses. The general administration is spread evenly between sewer and water. Solid Waste will not be a part of the utility rate study.

The water and sewer rates are based on the water and sewer budgets and are made up of three main components - fixed charges, variable charges, and capital improvement charges. Each major division in the water and sewer budget has a portion of fixed and variable costs and the rates are designed to fund these expenses. The fixed, variable and CIP rate components are discussed in more detail below.

Fixed Charges (Water and Sewer Base and Admin Rates)

To provide water and sewer services, there is a portion of the costs that are fixed charges. These are sometimes called the ready to serve costs. Essentially, there is a certain level of costs that are incurred to staff, operate and maintain our system prior to delivering any water or treating any wastewater from our customers. There is a regulatory requirement for minimum staffing to be prepared to provide service, a certain amount of supplies such as tools, training, and equipment that are needed to be ready to serve and there are electrical and gas charges to our facilities so that they can be ready to serve. These fixed charges are calculated as a percentage of the budget components to determine the fixed charges of operating the water and sewer system.

Variable Charges (Water and Sewer Consumption)

To provide water and sewer services, there is a portion of the costs that are variable charges. These charges are the costs to treat and distribute water and to collect, treat and dispose wastewater. The variable charge for water is essentially the cost to pump it out of Lake Tahoe, treat the water and deliver it to the customer. The variable charge for sewer is essentially what it costs to collect the wastewater from each property and deliver it to the wastewater plant, treat the wastewater, pump and dispose of the effluent and biosolids to the Carson Valley per State and TRPA requirements. This requires staff, chemicals, supplies, tools, equipment, and energy to perform these services.

Capital Improvement Charge

The capital improvement charge funds the replacement of water and sewer infrastructure. There are separate connection fees to new customers to buy into existing infrastructure. The capital charge is based on funding the costs of the five-year capital improvement plan with a consideration for the multi-year capital plan out a total of twenty years.

Summary of CIP Rate Changes for the Effluent Export Project

The Effluent Export Project has been the major driver in raising the sewer rates. The District currently does not have sufficient reserves to fund this project and it has been necessary to collect the funds through sewer rates in advance of the project. The District has initiated Phase II of the Effluent Export Project that includes replacing the remaining six miles of effluent export pipeline in the Tahoe Basin at a cost of \$23 million and other improvements to the export system. Previous capital budgets showed that up to 75% of this work was to be funded through the Section 595 Program. Large Sewer CIP rate increases occurred in 2011, 2012, 2013, and 2014 to raise the necessary capital funds for this project. The District is still working with our Federal Legislative Advocate to secure new funding through the Section 595 program. The capital plan has been modified to show that we receive no funding for the Effluent Export Project. The District is also pursuing funding options with other project partners.

The District has worked with the Tahoe Transportation District (TTD) on the feasibility of co-locating the new section of effluent export pipeline with the Tahoe Bike Path. At the October 2014 Board of Trustees meeting, the District entered into an amendment of the existing Interlocal Agreement that would allow the completion of the next steps of the project: completion of preliminary engineering and design and conducting the necessary environmental analysis of the proposed alignment to satisfy the National Environmental Policy Act (NEPA) and the Tahoe Regional Planning Agency (TRPA) requirements.

Should TTD be able to secure funding for the final design and construction of the proposed SR-28 bikeway, District Staff estimates there will be substantial savings by co-locating the pipeline within the bikeway. Depending on the total length of pipeline eventually replaced, the District could save upwards of \$7,000,000 via co-location and cost sharing with TTD over replacing the pipeline entirely within the SR-28 roadway.

Residential Utility Rate Summary

The following table provides the average monthly water and sewer utility bill for our average residential user (72,000 gallons water use per year) in the District's service area from 2014 to the proposed 2019 rates.

Year	Monthly Water Charge	Monthly Sewer Charge	Total Monthly Water and Sewer Charge
2014	\$35.41	\$55.75	\$91.16
2015	\$36.15	\$57.96	\$94.11
2016	\$37.15	\$60.24	\$97.39
2017	\$38.47	\$62.22	\$100.69
2018	\$39.79	\$63.89	\$103.67
Proposed 2019	\$41.35	\$66.44	\$107.78

The average residential rate has increased \$16.62 per month from \$91.16 in 2014 to the proposed \$107.78 in 2019. There has been an increase of \$5.18 per month to pay for capital improvements and \$10.44 to pay for operating cost increases which equals the total rate increase of \$16.62 per month over the last five years. The following table presents the five year total and annual average rate increases for the median residential customer.

	Monthly Water Charge	Monthly Sewer Charge	Total Monthly Water and Sewer Charge
% of Change 2014-2019	17.1%	20.9%	19.4%
Annual Change over 5 yrs.	3.2%	3.9%	3.6%

Over the last five years, the residential family median user has seen an average rate increase of 3.6% per year. The capital rate has increased by 2.4% and the operating rate has increased by 4.2% per year for 5 years.

ALTERNATIVES

The rate structure used by the District has been in place since the installation of water meters over 25 years ago.

COMMENTS

Staff has investigated the equity of the rate structure for the various customer classes in 2016. Equity is calculated by determining the proportion of fixed and variable demand on the water and sewer system (size of water meter, water consumption, sewer consumption, etc.) by each customer class compared to the fixed and variable revenue collected from each customer class (water and sewer rate revenue). The current rate structure exhibits equity amongst the major user classes. Miscellaneous accounts include effluent sales, state park facilities, construction accounts, etc.

Customer Class	Revenue as % of Water Revenue	Demand as % of Water Demands
Commercial	10.5%	10.5%
Residential	82.2%	81.3%
IVGID Facilities	5.3%	6.2%
IVGID Snowmaking	1.6%	1.8%
Misc accounts	0.4%	0.2%

Customer Class	Revenue as % of Sewer Revenue	Demand as % of Sewer Demands
Commercial	10.5%	10.2%
Residential	87.6%	88.1%
IVGID Facilities	1.4%	1.4%
IVGID Snowmaking	0%	0%
Misc accounts	0.5%	0.3%

The current use patterns are showing the rate structure is equitable among the customer classes but we are beginning to see some changes in use patterns that will need to be monitored for the impact to equity. We have seen a change in the multi-family use patterns as occupancy rates are decreasing. The current rate structure is a full service cost model with a pay for what you use commodity charge. This naturally creates a rate structure that is equitable since all customers will pay for what they use. A customer's base rate is calculated from the meter size which is equivalent to the customer's demand potential. The District's irrigation and snowmaking accounts do not pay excess tier charges on water which is why that revenue is less than the demand for those customer classes.

Area Water and Sewer Rates

The presentation at the Board meeting includes a slide on the area water and sewer rates. The Table below shows the area water and sewer rates using the average IVGID customer use pattern of 71,000 gallons per year.

Agency	Monthly Water and Sewer Rate	Agency Water Production in Million Gallons/day	Total Service Connections
Incline Village GID	\$ 107.78	2.7	8,070
South Tahoe PUD	\$ 111.06	4.7	14,025
Round Hill GID	\$ 111.00	0.2	479
North Tahoe PUD	\$ 119.90	1.1	3,903
Truckee Donner PUD	\$ 131.56	3.3	10,150
Tahoe City PUD	\$ 156.64	1.0	4,753
Skyland	\$ 160.75	0.3	593
Kingsbury GID	\$ 162.06	0.8	2,514

BUSINESS IMPACT

This item is a "rule" within the meaning of Nevada Revised Statutes, Chapter 237, but it does not impose a direct and significant economic burden on a business, or directly restrict the formation, operation or expansion of a business, and therefore does not require a Business Impact Statement.

History of IVGID Public Works

In 1961, the community of Incline Village was being developed by the Crystal Bay Development Company. In order to pay for improvements, The Incline Village General Improvement District (IVGID) was created by Washoe County on June 1, 1961 authorizing the newly created District to levy taxes to pay for improvements and for five elected Trustees to set up and run the District.

The District's first job was to construct, maintain and operate the District's sewer and water systems and to build roads to Washoe County specifications, which were then later dedicated to the County for maintenance and were no longer a District responsibility. The original systems included the Burnt Cedar water intake pump station which supplied water to 2 one-million gallon reservoirs and water rights totaling 1,250 acre feet for domestic consumption. IVGID issued bonds to pay the cost of building water, sewer and road improvements, and the bonds were repaid through assessments levied against the properties that benefited from the improvements.

In 1963 the District's original sewage treatment plant was completed and designed to handle sewage originating from commercial and multi-family residential areas only. The original design of Incline Village was to permit each single family residential lot to construct individual septic tank systems, therefore, capacity was not designed into the original plant for single family residential sewage. Treated effluent was stored in the winter and irrigated the golf course during the summer. In 1966 the first utility flat rates were adopted at \$6.00/month for water and \$2.00/month for sewer rates.

In 1969, Incline Village Inc. proposed to develop an additional 4,000 equivalent residential lots in Incline Village. The Incline Village General Improvement District commissioned an engineering study to determine the water and sewer system improvements to serve all of the present and planned development within the District. During the development by Incline Village Inc., the water and sewer system improvements were constructed according to the original plan to serve the developable lots.

A regulation that was passed in the late 1960's necessitated the construction of the effluent export system to pump treated effluent out of the Tahoe Basin. This was necessary because of a state and federal mandate that the use of septic tanks in the Tahoe Basin be discontinued and that all treated effluent be exported out of the Basin. By 1971, the District had complied with the federal mandate and the treated effluent was exported to a ranch in Douglas County during the irrigation season and to the Carson River during the non-irrigation season. During the period of growth in Incline Village there was also an increase in its boundaries due to annexation and expanded service contracts. The properties along Lakeshore Drive that were not part of the original District and the area between the District and the California State Line also had to find a way to serve their properties with sewage collection, treatment, and export. The residential properties along Lakeshore Drive that were not a part of the District annexed to IVGID in order to obtain sewer service. Washoe County Sewer Improvement District No. 1 (the club area and a small residential area in Crystal Bay), and Crystal Bay General Improvement District (the area between IVGID and Washoe 1) obtained sewer service through maintenance agreements with IVGID. The merger of Washoe County Sewer Improvement District No. 1 was completed in 1978. However, IVGID served the Crystal Bay General Improvement District with sewer service through an agreement until 1996. IVGID was not willing to merge with CBGID until their water system was brought up to IVGID standards, and that was finally done in 1996, at which time the merger with CBGID was completed.

After the construction of the effluent export system, IVGID's treated effluent was being used for irrigation on a ranch in Douglas County in the summer and was being discharged into the Carson River in the winter. New regulations on the disposal of wastewater required IVGID to either upgrade its treatment facility in order to continue disposing of the treated effluent in the Carson River or to have a year-round land-based disposal system. In 1983 IVGID completed the purchase of 900 acres in Douglas County to be used for development of a disposal site for its treated effluent. Construction of the Wetlands Enhancement Facility was completed in 1984 with local and federal funding.

In 1992 the wastewater treatment plant went through a major upgrade to improve the aeration system and solids handling facilities to improve treatment efficiency and redundancy and to increase capacities.

Construction of IVGID's Burnt Cedar Water Disinfection Plant was completed in 1995. The plant used ozone to disinfect IVGID's drinking water and allowed IVGID to receive an exemption from the filtration requirements of the federal Surface Water Treatment Rule.

In 1995 Waste Not was formed within Public Works. Waste Not was designed to develop and manage recycling programs for residential, commercial, and internal customers. In later years Waste Not developed programs including but not limited to Household Hazardous Waste disposal, water conservation, and watershed monitoring.

The Solids Agreement with Bently Agrowdynamics was signed in 1999. The agreement diverted the bio-solids from the landfill to composting at the Bently facility increasing our solid waste diversion rate and providing a low cost and long term disposal option.

In March 2003 the \$3.2 million Public Works facility was completed at the existing site that created "one-stop" shopping for all of IVGID Public Works. The new building now combines utility billing, compliance, utility supervision, engineering, fleet operations, building maintenance, and management under one roof. The new building also replaced the outdated vehicle shop with a new state of the art facility. In 2003, the Solids Handling Dewatering upgrade was completed at the sewage treatment plant which improved processes and reduced costs for handling sewage solids.

The blue bag recycling program was rolled out in 2008 where all recyclable materials are placed in a single bag for collection and delivered to the recycling facility in Truckee.

The Federal Government passed the Long Term 2 Enhanced Surface Water Treatment Rule in 2006 which requires enhanced disinfection to provide additional protection from disease-causing microorganisms and contaminants that can form during drinking water treatment. This is for water systems that use surface water as their raw water supply. The rule requires that IVGID add a second disinfection process by 2013. The CIP has included the installation of a UV disinfection system to be added to the water treatment plant and the replacement of the ozone disinfection equipment which was installed in 1995. This project finished construction in 2012 and is in operation.

The most important project in the Capital Improvement Budget over the next five years is Phase II of the Effluent Export Project. The Effluent Export Project started in 2003 with a planned completion date in 2011 to replace six miles of pipeline, make upgrades to the Spooner Pumping Station, and convert two State Parks wastewater plants into raw wastewater pumping stations with installation of a new forcemain to deliver that wastewater to the District. Through a total of six miles of pipeline have been installed and the work for State Parks has been completed. A total of \$18 million have been spent and the total of all the project phases is expected to cost \$21 million. The remaining \$3 million in project costs was spent upgrading the Spooner Pumping Station which was completed in 2013.

Phase II will replace the remaining six miles of aging pipeline within the Lake Tahoe basin. The six miles of pipeline is comprised of approximately 17,300 lineal feet of welded, cement mortar lined, high pressure pipe and 13,700 lineal feet of bell and spigot, cement mortar lined, low pressure steel pipe. This pipeline experienced significant leaks in 2009, 2014 and 2015. Subsequent investigations confirmed progressive corrosion of this pipeline that necessitates replacement. Work has been completed on the areas which were identified to be the most likely failure points. Design continues on the other areas of the pipeline with construction estimated to take multiple phases over several years to complete.