SKYLINE IMPROVEMENT AND SERVICE DISTRICT
MINUTES OF BOARD MEETING
October 21, 2021

A public meeting of the Directors of the Skyline Improvement and Service District was held on October 21, 2021 via Zoom.
Kurt Harland, Latham Jenkins and Jim Lewis constituting a quorum were present. Homeowners' attending were Worthy & Maria Johnson, Warren Machol, Mike Minter, Corbin McNeil, Arne Johansen, Derek Goodson , John Willott ,Bill Schwartz, and Deborah Krisik. Josh Kilpatrick of Nelson Engineering attended for the first part of the meeting.

1.Call to order
Kurt called the meeting to order at 4:00 pm.

2.Adoption of agenda
Kurt made a motion to approve the agenda. Latham seconded the motion which passed unanimously, 3-0.

3. Q & A with Josh Kilpatrick, Nelson project engineer on WWDC Skyline Level II Study.
Attached to these minutes are the Josh's answers (in blue) to homeowner questions submitted by email prior to 5pm on October 20, 2021. These are attached to the minutes (Attachment 1). Also attached and part of Attachment 1 are the written statement of homeowner Corbin McNeil presented at the meeting.

Josh then publicly addressed any additional verbal questions from homeowners who he had already responded to by email, in the chronological order received.

Jeffrey Anderson- did not attend meeting.
Mike Minter-

(1) asked a follow-up question on Jeff Anderson's emailed question on water conservation in Teton County.
(2) Relayed his research on Wyoming 2018 water rates, specifically on North Gros Ventre, Spring Creek, and Indian Paintbrush. Derek Goodson provided current information on Spring Creek. Warren Machol- asked questions of Spring Creek and its water meter project. John Willott- asked if Spring Creek had any asbestos concrete pipe.

Arne Johanson- no additional question
Fred Hibbert- did not attend
Jenny Karns- did not attend
Corbin Mcneil- Corbin's read his statement and his email is in Attachment 1.

Worth Johnson-

(1) commented on USDA grants that may be available for small communities.
(2) Asked what TOJ charges for irrigation vs household.

Warren Machol-

(1) questions on peak hourly, daily, and week usage assumptions.
(2) Commented on possible emergency conservation actions if one well was down during summer peak usage.
(3) Question on number of fire hydrants if we wanted fire protection if distribution lines are replaced.
(4) Questioned need for new well.
(5) Questioned some of the assumptions and feels more research is needed.
(6) Disagreed with actions taken by the board to date regarding the applications for the meters and new well.
(7) Questioned the reason for putting in a tiered block rate structure in the study.
(8) Questioned ISD's liability if a new meter is faulty/breaks, since the District would own the meters.
(9) Asked what "excessive irrigation" means.
(10) Questioned the fairness of putting the cost of improvements on current water users.
(11) Would like to see more analysis on cost of buried storage capacity.

John Willott-

(1) The newer well #3 is a very good well and the two existing wells are not close together.
(2) Asked if we test the water for asbestos which is served by AC pipe and if there is evidence of asbestos, we should replace AC pipe asap.
(3) John has considerable background and experience with Exxon as a senior geologist.
(4) Peak capacity stresses during irrigation season can be handled with other tools such as even/odd day irrigation to reduce irrigation peaks.
(5) John doesn't feel Skyline needs another well.

Kurt closed this Q&A portion of the meeting and given the limited time remaining the following agenda items were addressed in following order.

2. Review and Approve payment of invoices.

The below list of invoices as of 9-30-21 were reviewed by the Board for approval:

Clearwater Operations & Services	$	3,527.98
GettingGreatRates.com		3,095.50
Hess D'Amours & Krieger, LLC		660.00

HUB-BHJ Insurance, Inc	1,500.00
Lower Valley Energy	12,489.63
Nelson Engineering	347.00
Pinnicale Plumbing	1,897.87
Teton County Environmental Health	20.00
Teton Financial Consulting, Inc	2,865.80
Teton Media Works, Inc	50.25
Westwood Curtis Construction, Inc	11,290.00
Total	37,744.03

Action: Kurt made a motion to approve the current invoices as of 9-30-21 totaling $ 37,744.03. Latham seconded the motion which carried unanimously 3-0.

3. Appointment of November 2nd Election Judges for Director ballot.
Action: Kurt made a motion to appoint Susan Dong, Chris Thulin as election judges and Jeannie Stahr as an alternate in case of an absence. Latham seconded and the motion carried unanimously, 3-0

4.Review and approve Board minutes of 8-19-2021, 9/16/21 and 10/7/21
Action: Kurt made a motion to approve the minutes of 8-19-21. Latham seconded.
Public comment:
Warren Machol commented about the flaws in the August 19 minutes and the minutes not being reflected of comments. He reiterated his request to record the meetings.
Worthy Johnson agreed with recorded meetings.
Following public comment, the motion passed unanimously, 3-0

Action: Latham made a motion to approve the minutes of 9/16/21. Jim seconded.
Public comment
Warren Machol: regarding agenda item #6, said that the installation of fire hydrants and knowledge of sediment in his barn pre-dated adoption of Water Regs.
The motion passed 2-0 with Kurt abstaining as he did not attend the meeting.

Action: Kurt made a motion to approve the minutes of 10/7/21. Latham seconded.

Public comment:
Warren Machol- commented that he said more than what was written in the minutes. Also, a comment from Mike Minter was not in the minutes. Minutes didn't include reference to his or Worthy's requests to postpone special meeting.

Following public comment, the motion to approve the minutes as presented, passed unanimously 3-0.

5. Request of Worthy & Maria Johnson- Discuss and vote on the formation of a Water Committee to gather information that aids the Board's decision-making process.

Worthy said that their 10/7/21 request to form a Committee as this the largest water improvement in Skyline's history at a time when Skyline's water reserves are low. Worthy said that they would be looking for volunteers in the community with previous utility experience, such as Corbin McNeil, Mike Minter, Jeff Anderson, John Willott and Warren Machol. Other volunteers from the first filing would be welcome. As the entire project is projected to take over 10 years maintaining continuity is important.

Kurt thought that a committee had merit as well as some of the volunteers Worthy mentioned, but said he'd like to see more detail as he's uncomfortable considering something when he doesn't know what it's going to do. Jim suggested Derek Goodsen.

6. Adjournment

Kurt adjourned the meeting at 6:12 pm

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Approved
Kurt Harland
Chairman

Approved
Latham Jenkin
Vice Chair

Attachment 1

Gmail

Jim Lewis <jamesl5546@gmail.com>

Comments on WWDC Study and Board Proposed Actions

4 messages

Corbin McNeill <camcneilljr@gmail.com> Thu, Oct 21, 2021 at 4:38 PM
Reply-To: camcneilljr@gmail.com
To: Jim Lewis <jamesl5546@gmail.com>, Latham Jenkins <latham@circ.biz>, John Jenkins III <info@skylineranchisd.com>

I intend to make the following comments at the October 21, 2021 Meeting request that they be appended to the minutes of the Meeting

For those of you whom I have not met, I am Corbin McNeill residing at 525 N West Ridge Road. I have been a homeowner here since 1992 and lived full time in Skyline from 2002 -2011. My relevant business experience is that I was CEO of a large electric and gas utility, Chairman and CEO of what is now the largest utility holding company in the US and subsequently Chairman of another electric utility company.

I would first like to applaud the Board for undertaking a detailed review of our water system and addressing long overdue issues. Secondly, I believe that the analysis by Nelson Engineering is very well done and Josh should be commended.

On the other hand I am troubled by the lack of early and more transparent involvement of homeowners in the process. Within some of the constituency the process has sown distrust, lack of discussion of broader options to address long standing issues and is seen as diminished transparency in ISD business decisions. The agenda today contains a discussion of an advisory committee, an idea which I believe has merit as long as it deals with high level recommendations and not minutiae.

My specific comments on the plan are:

1. Slow down. Nothing in the study or responses to questions in today's meeting would indicate we face immediate system collapse.
Specifically:

A. Defer the new well pending additional discussion of ultimate capacity needs and the timeframe thereof. To invest in a new well just because government funding is available is like buying items from Walmart just because they are on sale. We have near term measures such as irrigation restriction in case of a complete well failure. Additionally conservation rates would be more appropriate to defer a new well

it would after adding a new well when you would want as much usage as ossible to generate revenue to pay for the upgrade.

B. Approve the remaining Water Supply and Water Storage projects as recommended spaced over "X" period of time with costs allocated to capital expense and operating and maintenance expense as appropriate. This would entail approximately a $350K commitment.

C. Complete the meter replacement project. I know some of my fellow homeowners do not agree with this but I believe it is foundational to future rate allocation which I will comment on in my closing. The WWDC study identifies two classes of water users, irrigators and non-irrigators and I believe this is an appropriate classification. Having metered water with accurate meters will provide data with which to allocate costs between the two classes. While other mechanisms are feasible, none provide the data to establish credibility to the rate setting process.

2. My final comment is what I consider to be the most important. That is that neither the WWDC report and to the extent I have read it, the Rate Study, address the Elephant in the Room, namely accumulation of funds to replace the aging distribution system. Just as we each experience with our identical Lower Valley Energy bill monthly "distribution charge" of $16, our distribution system replacement is rightfully equally shared with all users. The projected cost to replace the system is $4.3 million. This equates to approximately $48,000 per homeowner and when amortized over 40 years is still approximately $1200 per year or $100 per month. This amount is close to a multiple of 2 for small water users. This amount is in addition to the additional revenue necessary for the Supply and Storage improvements.

In summary, I believe we can defer additional supply, restrict excessive water use as necessary, improve the operation and reliability of the current system and begin a process to accumulate funds for future replacement of the most vulnerable part of our system, the distribution piping.

Thank you

Jim Lewis <jamesl5546@gmail.com> Thu, Oct 21, 2021 at 6:23 PM
To: Corbin McNeill <camcneilljr@gmail.com>
Cc: Latham Jenkins <latham@circ.biz>, John Jenkins III <info@skylineranchisd.com>

thank you, Corbin.

Gmail Jim Lewis <jamesl5546@gmail.com>

Fw: Minter/Skyline Water Study

3 messages

michael minter <trewil@hotmail.com> Wed, Oct 20, 2021 at 5:02 PM
To: Kurt Harland <thekurtharland@gmail.com>, Jim Lewis <jamesl5546@gmail.com>, Latham Jenkins <latham@circ.biz>
Cc: "skylineisd@simplelists.com" <skylineisd@simplelists.com>, "info@skylineranchisd.com" <info@skylineranchisd.com>, "jkilpatrick@nelsonengineering.net" <jkilpatrick@nelsonengineering.net>

Additional Questions:

Integrity of Data Assumption

-Jeffrey Anderson in his questions asked about the input(meter readings, etc) upon the water study assumptions were built. If it is assumed that home meters are providing inaccurate readings due to age/other, how can we be sure about other data inputs

Meters

-can Skyline obtain state grants/loans without installation of electronic meters
--what is the estimate as to how much water is the ISD losing through leakage and loss in revenues
-if installed, what is the estimated annual cost to a Skyline water user

Water Supply

-have the conclusions reached in the 2018 Willott water study changed at the adequacy of our water aquifers; water used
within the district is reabsorbed into the ground
-if an additional well is deemed to be required, the anticipated one time cost to explore for the well is $58,000, or approximately $650/lot. Can the cost be financed to lower the impact on water rates?
-could wells #2 and #3 be upgraded to operate simultaneously and at what cost

Distribution Lines/Pumps/Other

-what is the estimated cost of replacing the asbestos coated distribution lines where most of the leaks/repairs have occurred
-does irrigation place additional wear/tear on the system, or are components primarily degraded as they age
--will the larger pumps increase pipe pressures and to what effect on the (aged)

Alternative 1&2(Pumps)

-what drives the decision to install 1 or 2 %00 gpm pumps in wells #2 and/or #3

Funding

-Are there filing deadlines for various applications(loans, grants, etc that might be utilized in connection with an upgrade of the water system
-discuss state funds that might be available to fund portions of the expenditures

Fire Protection

-cost to bring water system into compliance with fire protection regulations/requirements
-hydrants for fire protection are estimated at $183K. Is that the total cost? Does that assume a hydrant every 500'. I believe regulations only require a hydrant every 1000 feet for lots greater than 3 acres, an estimated 27 hydrants seems like too many
-the report estimates that the hydrants would cost $183K or $110/lot which seems reasonable to protect million dollar homes in Skyline and given that underwriters have been unwilling to write policies in Skyline

Thank you, Mike Minter

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See replies to comment below in blue.
From: Anderson, Jeffrey B <Jeffrey.Anderson@tcw.com>
Sent: Monday, October 18, 2021 8:26 PM
To: jkilpatrick@nelsonengineering.net
Cc: info@skylineranchisd.com; Jim Lewis <jamesl5546@gmail.com>
Subject: Questions/Comments - Skyline

Josh,

As a residential owner in Skyline, I received and reviewed the Executive Summary for the WWDC Level II study. I have the following comments/questions on that analysis. I also noted that you are a Civil PE in Wyoming (congratulations, that license is difficult to achieve); I happen to be a Mechanical PE in California although that should not infer any significant technical knowledge since I left the engineering profession decades ago - although I do keep up my license:

- In summary, despite the questions/comments below, I agree with the need for the study and the recommendations made.
- In regards to the integrity of the current use data, are you satisfied that the current method of semi annual reading of water use are sufficiently accurate to support your forward recommendations? Yes. Historic well meter readings, taken every 5 to 7 days, was the primary source used to develop existing and future water demands. From that, maximum week demands were developed and max. day and peak hour demands were approximated utilizing common peaking factors for residential developments in the region. Is there a need for a factor of safety (or perhaps that is already provided for)? Future max. day and peak hour demands are established with peaking factors, which could be considered like a "factor of safety". Estimates for future demands are considered conservative.
- My process engineering days occurred may years ago, but the size of the storage reservoir seems quite small. Is it, relative to other jurisdiction? The storage tank is small, however it is adequately sized to serve the purpose of buffering well operations (pressures and flows) and provides storage during low flows that fall below minimum production rates of the wells. Please note that wells will be operated on variable frequency drives, which will allow for a 5 to 1 turndown (reduction in flow from max.), meeting flow regimes between existing and future average day to peak hour demands seen by the water system. Should that factor into/influence future peak or average use estimates? No. Provided storage availability and variable speed wells, there is no need to account for it in

future peak or average demand estimates. Alternatively, should any thought be given to adding to water storage? Yes, storage was considered and quickly determined to expensive when considering capital and life-cycle costs. Language from the June, 2021 WWDC Level II Hearing below describes the nuances of storage.

> • Procuring a larger site (land purchase or easement) is likely problematic and would be expensive. A large above-grade tank would be an eye-sore to the neighborhood, thus tank burial (more expensive) would seem to be the only feasibly option.
>
> • The topography of the subdivision will not allow a gravity tank, thus additional pumps (2 ea.) capable of peak hour plus fire flow (if any) and backup power (generator) per regulation would be required. The tank would be required to store 25% of future maximum day flows (100,000 gallons) plus, if considered fire flow (60,000-gal) per WDEQ regulation.
>
> • Consideration for a larger pressure tank would be costly and would require significant space with only 10% usable volume, i.e. considering storage requirements above, a 1.6 million gallon tank would be required to have an effective storge of 160,000 gallons.

- Resident level metering (with automated reporting) seems to have strong merit. Replacing decades old manually read meters with recent reporting technology makes sense. Is there other technology (or best practices) that should be considered in regards to current or future use estimates? Yes, a recommendation for more regular water audits (comparison of well flow vs. water sold) was made in the report. Also, system programming should include trending and automatic daily recording of flows. This will allow the district to establish max. day, and possible peak hour data based on empirical data rather than resorting to estimates.

- Are you comfortable with increased water demand assumptions for increased irrigation and/or ARU's? I have lived in and traveled to water constrained areas (e.g., Southern CA, Southern Arizona, Middle East) and the trend seems to be toward adopting landscaping and other uses that conserve water. I'm not familiar with the progressiveness of the current user rate however progressively higher rates for larger users tends to impose conservation. In any case, it is likely better to error on the upside since we are investing now for the (uncertain) future. Water conservation w/in Teton County is not a concern to

residences and limited measures have been adopted to address it. Most recently the Town of Jackson moved to a tiered rate structure, but that is the only case I know of that was geared toward water conservation. Even though the Town implemented this rate structure, I believe it will be unlikely is will reduce usage, particularly in the 3-Creek development. I am on the same page with you to error on the side of caution, it's better to have adequate water supply than not enough.

- I completely agree with your assessment of providing for adequate water pressure/supply for fire mitigation/prevention.
- Renovating decades-old facilities/infrastructure (whether distribution or production) seem well justified. Are there also safety concerns that are mitigated with the current improvements? Yes, inclusion of a disinfection system which would only be used in emergencies and installation of a modern/robust SCADA system to notify the water operator via. phone of any water system issues.

Again, many thanks for your study; I hope that questions/comments above are sufficiently clear.

Regards,

Jeff

Jeffrey Anderson, CFA, PE | Managing Director | 865 S Figueroa Street | Los Angeles, California 90017
+1 213 244 0094 direct | jeffrey.anderson@tcw.com Email by: Mike Minter

Kurt, Jim and Latham, as I stated in my 9/7 email to you, most residents never think about the water system(or the roads), they're just there. Not many consider how Skyline is managed. And I would assume that the number of residents who have read the water study could be counted on two hands (and would include the three of you). In my reading of the ISD minutes for the last five years, there are few references to the water system and its condition, only to items in the annual budget, the Willott study(ample water supplies of excellent quality), and discussions relating to the proper pricing(fixed vs variable). At a 6/2018 ISD meeting, Jim Lewis stated that water availability is not an issue and that a 3rd well was not needed. At a 7/18 meeting, Chris Thulin, in a discussion about the $1.90 water rate, stated that it was not intended to encourage conservation, but to increase reserves for the infrastructure replacement.

The 453 page WWDC report contained a number of surprises, mostly relating to the system deficiencies caused by age of the equipment and distribution lines. I was initially somewhat shocked by the $5.7MM(in 2/18 Clearwater had estimated system replacement cost at $1.8MM) price tag of the entire project, given the number of lots in Skyline. An analysis of the project phases and funding sources addressed some of that concern, especially in light of the state grants and loans(at favorable rates) available to WY water districts.

It can certainly be said that water has been an underpriced resource. It is not the commodity itself(ample supply of quality water/Willott), but the fixed infrastructure costs. Water charges(especially depreciation of fixed assets) have been based on historical embedded costs, not replacement cost. If charged properly, higher base rates for water would have resulted in larger water fund reserves. Houses built since the early development of Skyline have benefited from the most from these lower charges/rates, some for decades.

In addition to the board minutes and WWDC water study, I have read the following:

1)Cost Allocation and Rate Design for Water Utilities funded by the National Regulatory Institute, National Association of Regulatory Commissioners and American Water Works Association Research Association
2)Deloitte Insights(3/2016)-The Aging Water Infrastructure-Out of Sight, Out of Mind
3)U.S. Environmental Protection Agency-Setting Small Drinking Water System Rates for a Sustainable Future
4)Carl Brown**(consultant retained by Skyline)**-Getting Great Rates
5)Town of Jackson Water System website and water study
6)Wyoming Water Development site(wwdc.state.wy.us)-contains information on the 198 water districts in the state(size, customers, rates, etc.

I was a banker to the utility industry for almost 20 years. Not only did I have publicly owned water utilities as clients, but attended conferences with state commissioners and utility regulators. I also have presented to the American Association of Water Utilities.

Questions for the October 21st meeting:

1)assumptions about future demand

-existing lots will increase irrigation demand by 25%??

The increased demand was applied in order to become more consistent with Spring Creek and Teton Village water usage which average around 3500 gpd/lot for maximum day. The data you have supplied has max. day per lot at Gros Ventre North in excess of 5000 gpd. The 25% increase for irrigation is for a 30-yr build-out and assumes landscaping area could increase by 25% as older homes are replaced with new larger homes with expanded landscaping. There is no silver bullet here on predicting future increase in demands, but it is safe to assume older homes in Skyline will eventually be replaced and there will be associated irrigation increases.

-significant increase in ARUs which lead to 50% increase in irrigation demand??

Lot sizes (1 to 3 acres) within the subdivision afford enough space for building ARU/guest houses. A 50% increase in irrigation, or half of what is predicted for a main residence, is not considered excessive. There are currently 13 ARUs in the subdivision. The 30-yr projection, based on the current pace of ARU construction, assumes 22 more will be built by 2050. Note, year 2050 is the design basis for future demands and associated improvements.

-peak hour increases from 329gpm to 484gpm **(can peak usage be shifted/reduced through seasonal/peak hour rates/education of residents)** Yes, a tiered rate structure may help. It is hard to say how much considering residence of newer affluent communities (3-Creek, Spring Creek, Shooting Iron, Granite Ridge) tend not to pay much attention to water billing. In 30-yrs, it is anticipated Skyline will become more like the aforementioned communities.

-through introduction of peak hour/seasonal rates to conserve water resources/reduce demand, is it possible to delay drilling another well

This is a possibility, but the ISD would be saddled with continued education of residences regarding water system limitations and need to conserve water. residences. New residential meters is believed to be the first step in provided better insight to water usage.

-can well #3 be expanded

Yes, Well #3 could be expanded, however DEQ criteria requires supply redundancy; system has to supply peak hour demand with the largest well out of service. So, based on DEQ criteria, Well #2 would also need to be expanded which would require replacement of the existing backup generator and electrical service to the well site.

2)fire protection

-current system doesn't provide adequate water flow and pressure to meet fire protection in Skyline. **How were Skyline water reserves spent on fire hydrants, only to be now declared "out of service"?**
The hydrants were installed to flush the water system, which is important to do for removal of debris resulting from pipe decay, repairs and/or connections. Note that the hydrants can be reused/reconnected when/if the existing distribution is replaced.
Will upgrading/replacing pumps, provide such? A larger pump could be placed in Well #3, however historic pump testing on Well #2 indicates that drawdown of the water surface is likely to be excessive under future peak hour (500 gpm) flows. Currently, Wells #2 and #3 can, but don't currently operate simultaneously on standby power (existing backup generator). If one of the existing wells was improved with a 500 gpm pump, the existing generator would lack capacity to run the pump and in result DEQ would require replacement of the generator. Is it true that the current distribution lines do not meet WY regulations re: minimum size for fire protection. Yes, 57% of mains are undersized in accordance with WDEQ and NFPA. If that is the case, should we delay Phase 2(replacing the water distribution system) until 2030 at a cost of $4.7MM? This is a possibility. The suggestion for the foreseeable future is to diligently complete water audits (compare well production to water sold at the customer meters) every quarter to assess leakage, complete leak surveys as necessary and track distribution repairs closely. The ISD should consider a distribution replacement project once repairs start to approach the amortized cost to replace the distribution.

-can Skyline provide fire protection without completion of another well?
No. The minimum flow rate provided by a water system to be considered fire protection by Teton County is 500 gpm. Required fire protection for new subdivisions is 1000 gpm per Teton County and NFPA. Per DEQ, a system is required to provide maximum day demands plus fire protection with the largest well out of service, which totals roughly 680 and 780 gpm for existing and future max. day, respectively. Provided Well #2 age (50-yrs +/-), construction and historic flow testing results, it is not anticipated that it could be flow tested at 1.5 X the design flow rate (1170 gpm per DEQ) without resulting in an unacceptable drawdown.

3)priorities for water upgrade?

-meet expected growth - Yes

-provide fire protection – This is not required by Teton County since Skyline subdivision was platted prior to adoption of current regulations. Similarly, DEQ nor NFPA require fire protection for establishments pre-dating current regulations. That doesn't mean Skyline shouldn't provide fire protection, but the ISD should consider the cost/benefit. Benefits are lower insurance rates and increased protection resulting from reduced response time and a water system capable of providing fire flows. It is suggested that the ISD consider the amortized cost of fire hydrants to each lot owner and the foreseeable savings to each lot owner associated with lower fire insurance. Hydrants are estimated at $183K and assuming a 20-yr loan spread over 86 lots equates to roughly $110/yr per lot to have fire protection.

To be considered further by the ISD
-address aging infrastructure (~~pumps,~~ distribution lines)

My read of the study is that capital expenditures would have to be undertaken to replace the aging infrastructure, regardless of growth forecasts or bringing fire protection into compliance with regulations.
That is correct.

4)rate setting for Skyline
I don't think that there should be any discussion on this topic until Carl Brown, Skyline's consultant, has delivered his report and discussed it with the board and community. Since Nelson Engineering is not an expert on rate setting, I don't think that any statement should have been included in their report about method(s) to repay the loans required to undertake the project or charging for water based upon usage.

Water fees at Skyline are currently, and have been for many years, consisted of a base rate and usage (user) rate. The WWDC RFP and contract with Nelson requires review of Skyline ISD finances, that including base and user rates, and options for funding, that including available grants loans and adjustment to current rates to accommodate recommended capital improvements. The tiered rate example provided in the report, and associated Excel spreadsheet provided to SISD, was strictly an example and stated as such in the report. It was created as a tool for SISD to consider adjusting current rates to accommodate future loan re-payment, as well as payments to a sinking fund. Adjustment of rates is central to

funding capital improvements and is considered an unavoidable topic of discussion for Skyline residences. It is suggested that the exact rate adjustments are looked at in more detail, that including additional consideration to Carl Brown's rate report, in order to fund future expenses.

That said I have done an analysis of the 198 water districts in Wyoming (contained on the WWDC website). The information is somewhat dated(2018) in that the survey is only conducted every 2-3 years. I have analyzed the most important water districts in the area and important data such as water taps, wells, water capacity, storage, annual/peak day usage, rates, metered or not. This information is included the attachment.

As relates to tiered pricing, only 17 districts out of 153 water districts who responded to the question utilize tiered pricing. It is also clear that no cities or towns should be considered in the rate setting process. Skyline is a rural subdivision. We don't treat sewage as most towns/ cities do. We don't have restaurants, hospital(s), car washes , commercial establishments, etc. We are very small in terms of taps and are similar in size to Indian Paintbrush, Gros Ventre North and West. Note, Indian Paintbrush, Gros Ventre North and West strictly bill a base rate and no usage rate. The SISD currently bills for both.

Thank for your management of Skyline's infrastructure and affairs. It is a thankless, time consuming task(especially Jim Lewis's role as treasurer and secretary). I appreciate the effort you've expended on the water system study. It is a big undertaking for you and for the community. That said, community questions and concerns about the Nelson Engineering report and the consultant's report on rate setting should be addressed.

This is a big, important project for Skyline. Please keep the community informed. Push information(agendas, minutes, reports) out to the residents on listserv (at least those who remain on it).

Best, Mike Minter

Wed, Oct 13, 9:58 AM (4 days ago)

to John, jkilpatrick

I am in agreement with the recommendations.

Arne Johanson Oct 13, 2021, 10:48 AM (4 days ago)

to John, jkilpatrick@nelsonengineering.net

Hi,

I will be asking a couple questions. One will have to do with the disinfection system. Does that have to be chlorine or are there other options like UV, Ozone Generators or even Plasma Generators that would use less toxic chemicals and wouldn't adversely effect taste? Yes, other options like those listed are available, however they are more expensive and/or don't leave residual disinfectant (ability to kill bacteria throughout the system) in the water system. UV couldn't be used since it doesn't provide residual disinfectant in the water system, which would be required if pipelines were to become contaminated. The application of ozone for water treatment is problematic, as it would require an ozone generator to pump ozone gas and disperse it in the water supply; expensive proposition considering it would only be used in an emergeny. Alternatively, chlorination requires a small metering pump, holding tank and injectors, which is common equipment to most water operators and much cheaper considering other alternatives. The recommendation of chlorine disinfection is believed to be best suited for Skyline since it would only be used in emergency situations (detection of coliform bacteria); the system would only be utilized for a few days to disinfect the water system then turned off.

The other question has to do with water storage for fire. What is the potential for putting tanks in places like cul-de-sacs or even digging ponds on adjacent meadow so fire trucks don't have to drive so far to refill. These options were not considered as a result of current Teton County regulations surrounding subdivisions. The Teton County Fire Protection Resolution requires subdivisions with 30 or more residential lots, where average densities are 1 unit to less than 3-acres (Skyline Subdivision), to provide a water source in the form of a central water system with hydrants. Installation of a tank or utilization of a pond is a good consideration and it would likely reduce response time, however, the benefit of reduced fire insurance would not be realized for most people under such a scenario; NFPA requires fire hydrants to be w/in 500' of the home. In addition, it would be hard to justify capital and continued O&M costs for installation of tanks, when they would only be used for fire and would be expensive. Lined ponds would also be expensive and access to stored water would need to be made available during winter months when they would be subject to freezing.

These are just thoughts since we are in a planning phase, I just want to think about alternatives.

Arne Johanson

Fred Hibberd Oct 13, 2021, 11:21 AM (4 days ago)
to John

To Whom It May Concern:

We are in agreement with the recommendations to our water system.

Fred Hibberd

Jenny Karns Wed, Oct 13, 12:19 PM (4 days ago)

to John

Thank you for this extensive work that is not all fun and games, yet needs to be done.. I read it and am in agreement with the recommendations.

My house was the 3rd house built in Skyline in 1968..Lot#10..It has never been fully remodeled, but many improvements have been done here and there over the years. I had to put in a new septic system 12 years ago and a new 1" water line to the curb 10 years ago. I was miraculously able to remodel my kitchen 3 years ago and this spring I pulled the trigger on a much needed new roof (fireproof asphalt shingles replaced cedar shakes).

My house is not fancy in comparison to many of the houses in Skyline (or JH), but it is a functional amazing home on a great lot, in one of the most beautiful neighborhoods on Earth. We have to be "stewards of the land and water" in this crazy day and age. Regardless of how big, small, old, new, upscale or rustic our homes are, we all must work together to maintain and upgrade our water system..I imagine that if I were on my own well, I would have had to replace or upgrade it by now also..There have been a few times in past 2 years when then water was off and it's frightening to think of it not coming back on in a timely fashion..I have several back-up water jugs for "just in case" days. It's not an expense that I want or need in life right now, with 2 kids in college and increased cost of living to remain in Jackson Hole, but I will make it work. Hopefully we can secure outside funding as well. We can do this together.

Sincerely,
Jenny

Corbin McNeill Oct 14, 2021, 5:08 PM (3 days ago)

to John, jkilpatrick

Questions for the presentation:

1. As a part of the introduction, would the Board please confirm what parts of the Report the Board is requesting comments on; ie. the whole report or the recommendations and funding for the Phase 1 implementation.

From Jim- Josh is addressing all questions on the entire report. The board is currently focusing on the Phase 1 recommendations and application process for State grants and loans.

2. How was the base fee of $540 per plot/parcel used in Appendix E (Revised example of Tiered Water Rate Structure for Skylyne Ranch) determined?

$540 was last fiscal year's base rate; it was a starting point for the analysis.

3. When is the rate study expected to be concluded?

From Jim- Final report from Carl Brown received Oct 18 and will be posted to Skyline Website Oct. 19 and sent on list-serve. At the December 16 board meeting Carl Brown will be on Zoom to answer questions similar to the format used with Josh Kilpatrick. This should allow homeowners time to review the report and submit questions by December 9, one week prior to the December 16 meeting.

Part 3: Homeowners Questions at June 22, 2021 WWDC public meetings. Answers follow.

JK is Josh Kilpatrick

KB is Kevin Boyce (WWDC)

Worthy Johnson and Warren Machol: Was an alternative considered to putting a new well vs. putting in a large tank?

JK: The alternative would be significantly more expensive from a capital cost, O&M and replacement (life-cycle) standpoint. Issues include:

- Procuring a larger site (land purchase or easement) is likely problematic and would be expensive. A large above-grade tank would be an eye-sore to the neighborhood, thus tank burial (more expensive) would seem to be the only feasibly option.

- The topography of the subdivision will not allow a gravity tank, thus additional pumps (2 ea.) capable of peak hour plus fire flow (if any) and backup power per regulation would be required. The tank would be required to store 25% of future maximum day flows (100,000 gallons) plus, if considered fire flow (60,000-gal) per WDEQ regulation.

- Consideration for a larger pressure tank would be costly and would require significant space with only 10% usable volume.

Based on experience, what is your opinion on the state of the system based on a 1 – 5 ranking, with 5 being the highest need?

JK: Supply, storage and new residential meters is a 4 and distribution is a 2. Suggestion is to continuing to do water audits based on water production and water sold, as well as tracking repairs and costs to assess need to replace the distribution system. Right now, the distribution system is considered to be in a state of failure, however it is highly questionable supply can meet demands moving forward, thus additional supply is high priority.

Warron Machol: How much storage does Spring Creek have? JK: 300,000 gallons.

Warron Machol: How large is the Skyline tank and is there a way to change settings to increase capacity?

JK: 5,000-gallons, with 480-gallons of usable storage. The usable storage is equivalent to 1- minute of supply on a future peak hour. Pressures could be changed to increase capacity; however the changes in pressures would cause consequences within the system - too low or too high of pressures in the system.

Warron Machol: What is the average cost to each user for Phase 1 and how is that cost distributed to each individual user.

JK: Average cost per user (non-specific to each current user) was demonstrated in the table within the presentation. It is expected that high water users would pay more if costs were distributed, which it is common for most public water systems to obtain the majority of revenue based on usage and not base fee.

What's the expected lifespan of a new distribution system?
JK: Manufacturers suggest a 100-yr life for modern day PVC and DIP.

Carolin Kane: I am on a small fixed income. Need to consider people that are retired and on a fixed income.

JK: The suggestion is to change billing practices to bill more based on water usage so that people on fixed income don't see the brunt of costs associated with future water system improvements. This is what the Town of Jackson has done.

Warren Machol: Goal for water loss?

JK/KB: Water loss should be no more than 10% of the water produced by the wells. Residential meters will assist with assessing for leaks and determining if leak detection surveys or repairs are required.

Part 4: Sponsor Intentions

Kurt Garland, Chair of SISD: Intent of the Board is to pursue the timeline and funding for Phase 1 improvements.

Part 5: Private Entity Interest in Providing Services

KB: Is there any interest in forming a private enterprise fund? No.

Questions from Jim Lewis

Section 3.2 pages 12-15 Future Water Demands

(page 13)- 4th paragraph- What if ARU growth is say 25% vs 50% and/or irrigation is 15% increase. Is there a tipping point where the question of well #4 becomes "iffy"? Below is the resulting table if those are changed. Skyline would still need a larger well.

*SUMMARY OF FUTURE DEMANDS			
Description	Demand (gpd)	Demand (gpm)	Demand/Lot (gpd)
Average Day	82,500	58	917
Average Winter Day	13,600	10	152
Maximum Month Ave. Day	246,500	172	2739
Ave. Day on Max. Week	282,700	197	3142
Max. Day (1.25 x Max. Week)	353,400	246	3927
Peak Hour (2.5 x Ave. Day)	-	428	-

*Future Demands for 90 lots w/ 35 lots containing ARUs in the next 30-yrs. Demands include unaccounted for water (% consistent w/ existing) and an overall irrigation increase of 15% to account for additional irrigation demand associated with future increases in landscaping.

(page 15) isn't the question regarding more hydrants independent of the issue of a new improved distribution system. Yes. You certainly need the improved distribution system if you want the hydrants for fire protection. Yes. A future board can decide if we want fire protection separately. Is this correct? Yes. The need in the medium term (10-20 years) to start planning to replace our lines is because they are nearing the end of their useful life, correct? Yes.

Section 4-4 Summary of Deficiencies

(Page 18)- at what point (year) do we get our adjudicated water rights approved? What do we do in the meantime regarding our non-compliance? When should we prepare our "first" annual report? I would prepare your first annual report next year in anticipation of submitting for a new well permit (Well #4). The total adjudicated amount can be adjusted for all three wells once Well #4 is tested for flow and water quality and the final design pumping rate is established.

(page 19)- Well #1 Given the higher arsenic levels than EPA standards, aside from irrigation, is that capped good for anything.
As discussed, the well offers limited capacity (100 gpm) and to install and maintain an arsenic treatment system would be expensive. The best option in my opinion is to sell the SISD parcel and well to someone who can use it for irrigation.

(page 25)- even with well #4 won't our small storage tank always be a choke-point or will the VFDs take care of this as the snake river aquifer will be our "storage tank". The latter is the case. The storage tank will buffer well operations (pressures and flows) and allow for small demands (less than minimum well capacity) to be satisfied.

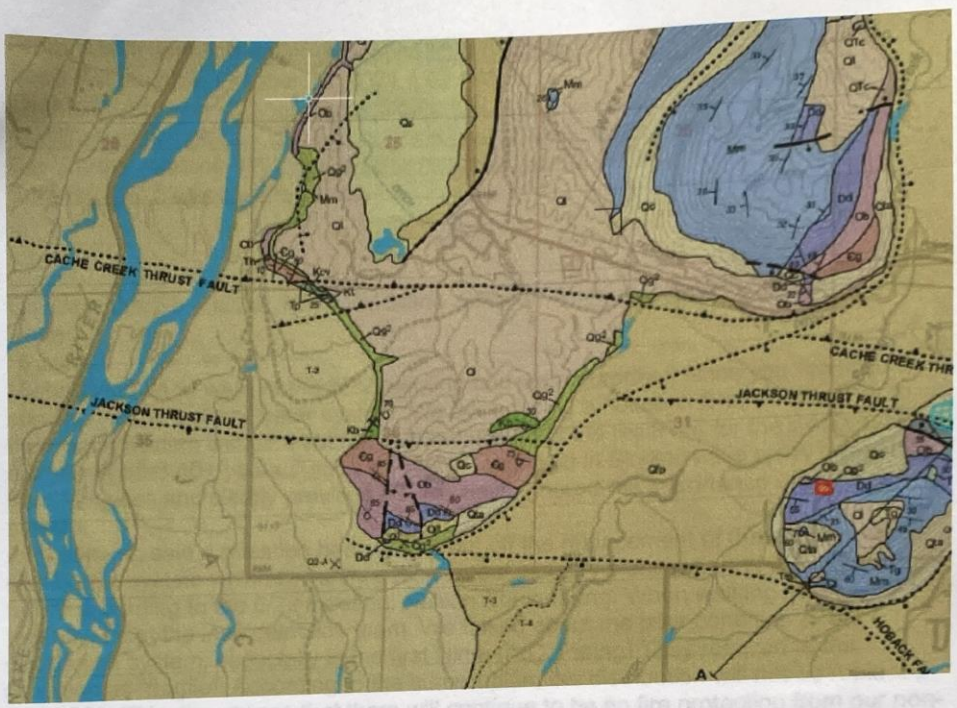
(page 30)

2nd paragraph- that's for wells # 2 and #3 right. When should that interlock be in place?
The interlock is for wells #2 and #3 and should be in-place when Well #4 is constructed. If the ISD elects not to construct Well #4, placement of an interlock and replacing the well controls to allow for simultaneous operation should be considered. Note, per the report it is anticipated that current peak hour flows are pushing up against existing well capacities/capabilities.

last paragraph- what year is the trench planned for the fiber optics ? From a risk management viewpoint, does it make sense to have a dormant gas line laid at the same time if a future board decides to connect to LVE gas and convert the back - up generators to natural gas from propane.

The fiber line will be installed when Well #4 is completed (Level III work). Yes, a dormant gas line is suggested and included in the cost estimates for Phase 1 Level III work.

Page 39-
Second paragraph- you stated our Asbestos Concrete (AC) in the First Filing and PVC lines (the rest of Skyline) are nearing the end of their useful life. I think our PVC line (1974) is 47 years old and our AC (1965) is 56 years old. On table 11.10 (page 66), you give 20 years as assumed remaining useful life. Should we be expecting more repairs until lines are replaced given their increasing age? Yes, and it will be super important to track and record this information along with leakage and water audits. **If we have a moderate earthquake are our AC or PVC lines at greater risk?** I would say yes, but that truly depends on the intensity of a "moderate" earthquake. **As parts of Skyline have bases of glacial loess, does loess provide a greater or less "cushion" in the event of a moderate earthquake.** The ability of loess to provide earthquake protection is highly dependent on soil saturation. Loess is subject to liquefaction in a saturated condition; which condition is likely to occur in the Spring. In addition, per the image below, there are thrust faults that run through the subdivision, namely the Cache Creek and Jackson faults. Earth movement in the area would undoubtable follow along the existing fault lines.



2nd para page 50- isn't this phase 2? Yes

Next to last paragraph? isn't this a "maybe" if we really want fire protection and 27 hydrants down the road (10+ years)? Yes

Page 58, Table 9.6 (cont'd)
Same question as earlier, are the 27 hydrants a given, or is it independent of main line replacement, i.e what if we don't want fire protection, and in any event a board in the far future will decide on it. Fire hydrants are not required and should be considered optional by any current or future SISD Board.

From: Maria Johnson <mariajjohnson53@gmail.com>
Sent: Wednesday, October 20, 2021 4:02 PM
To: Maria Johnson <Mariajjohnson53@gmail.com>; Skyline <skylineisd@simplelists.com>; jkilpatrick@nelsonengineering.net
Cc: Worthy Johnson <WJohnson@lawrencecapitalmgt.com>
Subject: Re: Skyline water project

On Wed, Oct 20, 2021 at 12:59 PM Maria Johnson <mariajjohnson53@gmail.com> wrote:

Hi Josh,

My husband and I were at the 6/22 meeting and were surprised when you reported the condition of the current water system. We are building a house in Skyline and new to their water system issues. First, I find it appalling that the reserves for the water system are so low after 40+ years. Those who have long lived in Skyline have really benefitted from low rates and clearly previous Boards have ignored the importance of the water system.

All that being said, I question how we can put off the replacement of the existing water distribution system which currently doesn't meet industry standards and is in a state of failure according to the 6/22 meeting, Nelson Engineering. When walking in Skyline recently, I met the leak detection team. We talked about the poor condition of the distribution system, especially in the first filing. (A.C. Piping) They referred to the condition as "fragile". According to the current plan, the distribution will not be replaced until 2030. This also means that there will continue to be no fire protection from our non-functioning fire hydrants for 9 additional years. Please note, without any improvements in supply (flow capacity), the Teton County Fire Marshal and NFPA would not consider any current or future fire hydrants installed to provided adequate fire protection. (By the way, why do we pay for shoveling the fire hydrants if they don't function for fire protection?). The contractor responsible for snow removal throughout skyline would likely be responsible for clearing snow near the hydrants. Typically markers (metal flags) are placed and extended above snow pack at each fire hydrants for easy location. This will have massive insurance consequences for homeowners.

The current estimated cost for this part of the project is about $4+mm

What do you anticipate the cost being in 9 years? How will this be paid for? Assuming 3% inflation, the cost in 9-yrs (2030) would be $4.9M. The cost of the project would likely need to be paid for with a loan.

As you stated in the 6/22 meeting, the ISD Board is focusing on Phase One of the project because of the grants and loans, not necessarily on the urgency and condition of the entire water system…supply, storage and distribution.

This is a major project for the ISD and should be looked at more carefully. I would hope that we can revisit the projected schedule which seems to have already started.

(i.e. processing the loan for the meters)

Respectfully submitted,

Maria Johnso

From: michael minter <trewil@hotmail.com>
Sent: Wednesday, October 20, 2021 5:02 PM
To: Kurt Harland <thekurtharland@gmail.com>; Jim Lewis <jamesl5546@gmail.com>; Latham Jenkins <latham@circ.biz>
Cc: skylineisd@simplelists.com; info@skylineranchisd.com; jkilpatrick@nelsonengineering.net
Subject: Fw: Minter/Skyline Water Study

Additional Questions:

Integrity of Data Assumption

-Jeffrey Anderson in his questions asked about the input (meter readings, etc) upon the water study assumptions were built. If it is assumed that home meters are providing inaccurate readings due to age/other, how can we be sure about other data inputs.

Utilizing well pump manufacturer pump curves, hydraulic calculations where completed on the existing pumps to verify field flows and pressures. Results of that analysis, described in the report, indicated flows are consistent with the flow meter at the tank building an manufacturers' pump curves. In addition, for FY 20/21 metered well production was 25.4 million gallons, while water sold (total of customer meter data for the year) was roughly 21.7 million gallons. This equates to 15% unaccounted for water, which was assumed reasonable considering the age of the Skyline water system and that most systems that are newer in age have less than 10% unaccounted for water. In short, metered well production data is considered the best data available, thus it was used to establish future flows and make recommendations for improvements.

Meters

-can Skyline obtain state grants/loans without installation of electronic meters
Yes. Note: WWDC and SRF require residential meters for all water entities applying for grants and loans through their programs. The existing meters are believed to adequately satisfy this criteria. Green funding (0% interest) is currently being sought to replace meters at Skyline. If Skyline didn't currently have meters, the funding would still be "Green" funded, same as we anticipate it to be now.

--what is the estimate as to how much water is the ISD losing through leakage and loss in revenues

Unaccounted for water is roughly 3.7 million gallons per year. Lost revenue based on FY20/21 ($1.70/1000 gallons) is $6290. Note that this could equate to more lost revenue in the event the ISD elects to charge relatively more for usage and less on the base fee, which is common among many water entities with residential meters.

-if installed, what is the estimated annual cost to a Skyline water user
Roughly $85/yr for 20 yrs.

Water Supply

-have the conclusions reached in the 2018 Willott water study changed at the adequacy of our water aquifers; No. The water quality is good and supply from the Snake River alluvial aquifer is abundant! water used within the district is reabsorbed into the ground. Yes. With exception to the portion subject to evaporation associated with irrigation, the majority of water is reabsorbed into the ground.
-if an additional well is deemed to be required, the anticipated one time cost to explore for the well is $58,000, or approximately $650/lot. Can the cost be financed to lower the impact on water rates?
Yes, a loan could be sought. Provided the amount ($58K), the up-front costs to seek funding through DWSRF/SLIB ($5K - $8K), financial reviews ($4K+), plus the nuances associated with program compliance (buy-American, Davis Bacon, etc.), which are required for design and construction, make this option undesirable.
-could wells #2 and #3 be upgraded to operate simultaneously and at what cost
There is discussion in the Level II Report coving this. See Section 9, page 59, "Alternative 1". Since the generator requires replacement under this scenario, the costs for upgrading both wells are nearly the same (-$5k); costs are provided in Table 9.7. Note that upgrading of Well #2 to meet future max. day flows is not a guaranteed outcome, and costs to flow test that and Well #3 are included.

Distribution Lines/Pumps/Other

-what is the estimated cost of replacing the asbestos coated distribution lines where most of the leaks/repairs have occurred
A.C. pipe comprises roughly 31% of water mains. Assume hydrants are not included, the cost would be roughly $1.3M. Please note that this cost is purely schematic (+/- 20%), and assumes replacement of 1/3 of all paved roadway in the vicinity of the new water main. Also note, that replacement of A.C. main in the lower flat does not afford any increase in fire protection; i.e. flows and pressures would be nearly the same as currently exist due to capacity limitations of upstream

infrastructure (pipelines, pressure reducing valves, etc.). If considering a phased project, the report recommends replacement of mains starting at the tank so that there is an added benefit of increased supply capacity to the homeowners located within the project area.

-does irrigation place additional wear/tear on the system, or are components primarily degraded as they age

Flow contributes to wear-and-tear on the water system; pipes are subject to additional scour, mechanical pressure reducing valves wear with increased use, electrical components such as starters, pumps, motors, etc. experience wear with operation, and the water system (pipes) see additional pressure cycles with well operation. Age also degrades components as well; rubber pipe gaskets degrade and start to fail, humid environments (manholes, and once the tank building) are detrimental to electrical and mechanical equipment, buildings, electrical components and enclosures are exposed to the elements and need replacement, etc. It is hard to pin down whether water system age or use results in more degradation. I would say degradation, considering either use or age, it is component specific.

--will the larger pumps increase pipe pressures and to what effect on the (aged) distribution lines

Proposed improvements described in the report call for bigger pumps, which will not increase system pressures. The pumps would operate on variable frequency drives (VFD), which allows motors/pumps to operate at variable speeds to meet operator specified pressures. The wells would turn on and off at similar pressure set points that currently exist.

Alternative 1&2(Pumps)

-what drives the decision to install 1 or 2 %00 gpm pumps in wells #2 and/or #3

Provided limited tank storage (450-gallons) it is critical that wells are capable of meeting future peak hour demand, otherwise the system will lose pressure and flow delivery capability. Also, it is important to have backup supply capacity in the event of pump failure; thus each well, or one well and combined capacity of two wells, should be capable of future peak hour (500 gpm).

Funding

-Are there filing deadlines for various applications(loans, grants, etc that might be utilized in connection with an upgrade of the water system

Yes. The ISD has been in contact with, and is intimately familiar with WWDC and DWSRF deadlines as it pertains to loan and grant funding for water system improvements.

-discuss state funds that might be available to fund portions of the expenditures This is covered in detail in the Level II report. WWDC offers grants which cover up to 66% of project costs for water supply, transmission and storage improvements. Also, the WWDC Groundwater Exploration program (exploration for a new well) is grant funded for 75% of project cost.

Low interest loans can be sought through WDSRF to cover any costs not grant funded by WWDC. A recent loan for a WWTP expansion at Teton Village totaling $4.5M has been approved at 1.75% interest for a 20-yr term. A loan interest rate of 2.5%, or less, is expected under the WDSRF program for a future Skyline distribution system replacement project.

Fire Protection

-cost to bring water system into compliance with fire protection regulations/requirements

-hydrants for fire protection are estimated at $183K. Is that the total cost? Yes. Does that assume a hydrant every 500'. I believe regulations only require a hydrant every 1000 feet for lots greater than 3 acres, an estimated 27 hydrants seems like too many. The regulation is interpreted for developments with 30 or more lots with average lot sizes less than 3-acres. Many of the lots in first filing of the subdivision (lower flat) are less than 1-acre. An initial map was sent to Teton County Fire Marsh Kathy Clay describing fire hydrant spacing. That said, this is a good question and Nelson will follow up with Kathy to clarify if the western portion of the subdivision could do with 1000' spacing considering the lots likely average more than 3-acres.

-the report estimates that the hydrants would cost $183K or $110/lot which seems reasonable to protect million dollar homes in Skyline and given that underwriters have been unwilling to write policies in Skyline

Thank you, Mike Minter

-

From: Worthy Johnson <wjohnson@lawrencecapitalmgt.com>
Sent: Wednesday, October 20, 2021 8:53 PM
To: jkilpatrick@nelsonengineering.net
Cc: mariajjohnson53@gmail.com
Subject: FW: ?s re: SISD WWDC Report
Importance: High

Hi Josh….I asked you the below question at the 22 June 2021 Public Meeting:

Please keep in mind that the entire report is comprised of recommendations and the SISD can take them or leave them.

The answer printed here and in the posted WWDC Report **is inaccurate**. The emphasis on my question was oriented to your "personal professional experience'" as an engineer and not on the SISD Board's direction given to you and Nelson Engineering.

The reply above is based on my professional opinion. Pipelines have been known to last up to 100+ years, but that doesn't mean they will. There is a study referenced in the report that states that PVC and AC pipes on average start to fail in 50-yrs. With that my recommendation is to have new residential meters in-place along with new meters on the production wells for the purpose of better water auditing; current water auditing take place biannually and it is difficult to decipher actual water sold since residences are sending readings into the ISD w/in a +/- 30-day window. The meters will allow the ISD to compare (do a water audit) of well production vs. water sold to assess lossed revenue and distribution condition (leaks) in the system. Provided current un-accounted for water (15%), it is my opinion that there is no need to start replacing distribution, particularly given cost and limited SISD cash-on-hand. I think it is important to start planning for such a project by putting away reserves to absorb any future loan repayments. Note that there are most certainly inaccurate meters within the subdivision, and there is no residential meter manufacturer that will guarantee readings past 20-yrs.

Your response was just the opposite: DISTRIBUTION WAS #4 and the Metering/Supply/Service was #2. The rationale for putting the emphasis on what you and the SISD Board categorize as Level One (1) is that these expenses/costs would be covered by grants/separate funding/ etc. and would not be an "onerous/outrageous

cost" to homeowners on a "fixed income." This entire report and its Summary & Conclusion focused solely on this aspect. That's honorable as a hired consultant***.....yet very short-sighted by the various SISD's previous and present Boards.***

My scope, as described by the WWCD, is to work closely with the board to identify priorities. You can call Barry Lawrence with WWDC and ask him what my obligations to Skyline were/are, and I would bet you get nearly the same answer. So yes, the report is tailored to the Board's priorities based on my recommendations. With that, I don't know how the approach taken was off base… My personal opinion is the Board was right to take advantage of the grant funding to update supply and storage. Given distribution is not in a state of failure, taking advantage of a project that would be almost 70% grant funded to upgrade supply and storage facilities that are anywhere from 20 to 47 years sure seems like a good deal.

What can be said when over some forty-seven (47) years-since 1974 for the PVC Line from Ely Springs, in the 2nd, 3rd, & 4th Filing…….in and to the majority of the 1st filing's now fifty-six (56) years of AC (Asbestos & Concrete) piping have never been included in an "ASSET RESERVE STUDY;" given that the various previous and existing SISD Boards have consistently over- invaded the WATER RESERVE account down to approximately $42,000-effective 7 October 2021- while the replacement cost for the ENTIRE SISD Distribution System is over four million dollars ($4,000,000) according to your report ? Some would say INEXCUSABLE….

I don't think anyone is excited by the amount of reserve funding, but that is the purpose of completing a study to identify water system and financial shortfalls. The good news is the Skyline system is not in a state of failure, which other communities undoubtable are….Kevin mentioned this at the hearing. Given this, the SISD has some time and ability to change courses to adjust finances and plan for the future improvements.

Nelson and the Board are endorsing an 8 year period in which to collect funds for a Distribution Pipeline Replacement. Given that this is the ***SISD's Most Pressing and "IN FAILURE" system-your words***, what would you recommend? A recommendation perhaps:

I do not make decisions for the Board. Yes, I give them tools to make decisions, but they have to make decisions on what improvements to do and whether District finances can align with any capital improvement projects.

At the hearing (minutes in the report), the Board stated there intent to complete Phase 1 improvements and replace residential meters in the upcoming years (5-yrs). I do not recall them stating any intent to do anything past 5-yrs (Phase 2 – Distribution).

Initiating a co-existing strategy to proceed with Level One and **at the same time/overlap** with attacking Level Two (2) now with a successful loan application to aggressively attack/replace the "FAILED" distribution system-$4.2mm over the next 12-18 months?

This was not recommended in the report and would need to be a decision by the Board. If considered, a $4.2M loan on a 20-yr term at 2.5% interest would be an annual repayment of $270K, equating to roughly $3100/residence for 20-yrs. To give you perspective, the average annual cost per homeowner last year for water service was roughly $880. Recommendations in the report are to consider distribution system replacement based on water audits and prevalence of repairs for leakage. Tracking of repairs are particularly important so that the ISD can identify pipe type (PVC or AC), year installed and size under failure and plan accordingly for replacement. Please note, if the ISD can beef-up reserves now, it will not be as difficult to convince lending agencies to provide a loan.

Truly, I do not want to hear of a SISD-infected response. Josh, you know all the details. Give us an independent, aggressive approach to this FAILED SYSTEM replacement. I believe you are aware that there is no CA system in the county this old that is either in existence nor not replaced. Correct me if I am misinformed.

My opinion is the Skyline water system IS NOT a FAILED SYSTEM. Without any action from the Board there could certainly be a possibility it could reach a failed state, which is why it is super important to start being proactive in upkeep of the system and planning for (financially) system replacement. There may have been lack of planning in the past, but do give the current Board credit for trying to comprise a facilities and financial plan that will help guarantee adequate and quality water will continue to be delivered to residences of Skyline. Any improvements will certainly benefit users and provide a favorable impact to real estate values within the subdivision; I know I wouldn't want to buy a home in the area if the water system is compromised.

The following systems, that I am aware of, comprise pipelines similar in age to Skyline. I am certain there are likely others….

- Teton Village – 1950s to 1970s: Note, they are actively phasing the replacement of sections of main every year. Mains installed in the mid-50s on McCollister, Esther, Curtis, Morley, Holly, and Rachel Drives are still original.
- Town of Jackson – 1950s to present: Note, they are actively phasing the replacement of sections of main every year.
- Indian Paintbrush - 1973 – 1978: They have replaced small portions of distribution mains, but the majority (90%+) are original.

I have provided my opinion in the responses above.

Respectfully Submitted,

Worthy Johnson
N. Meadowlark

P.S. Who in the SISD was in receipt of your/WWDC Executive Summery/ Full report/Outline on or before the 22 June Public Meeting

From Warren & Debbie Machol 10:14pm Oct. 20, 2021

Josh,

The WWDC report is a substantial document. The total size is 453 pages. There are many facts, tables, pictures, and graphs that have been assembled from various sources.

Getting an inventory of our water system infrastructure and looking at the system weaknesses should be of long-term benefit to the community's knowledge.

Details about you and Nelson Engineering

Are you the designated Nelson Engineering manager for all Skyline projects?

Is it safe to say at this point your knowledge about Skyline water system is extensive and that you are an expert on the Skyline water system?

For how many water systems have you done an analysis like the Skyline WWDC study?

Please list – system size, number of taps, number of wells.

I understand that Nelson Engineering was paid approximately $95,000 to assemble the WWDC level II report? Correct?

What additional projects is Nelson Engineering working on that have to do with the Skyline water system. Which of these projects are items you suggested in the WWDC study?

How much do you expect to collect from Skyline if the community follows your recommendations in Phase 1? How much this year?

WWDC Report discussion

Since the Nelson WWDC report was made available to the public (August 16, 2021), have you met with ISD members to discuss the WWDC report?

Have there been any changes in your water system assessment since the report was filed in July that you would like to report?

Given the size of the report, it is vital to determine what parts of the report are facts, what parts are assumptions, and what part are your opinions as the author of the report.

Given this is the first time ISD members have been able to ask questions about the Nelson WWDC report, I have edited and limited my comments to several key timelines, key assumptions, and a distressing lack of transparency.

THERE NEEDS TO BE ADDITIONAL FOLLOW-UP AND RESEARCH BEFORE PROCEEDING WITH WWDC RECOMMENDATIONS.

Peak, week/day, and hour usage:

The concept seems to run through much of your analysis and justifications for actions. It is often referred to make additional assumptions and projections. It also appears to be the basis for all current and future water needs.

What are known facts or data? What are assumptions?

Please use the table and graphs below to outline which parts are facts and which are assumptions. For any parts that are

assumptions or projections, provide detail on how Skyline could acquire facts or data? Please confirm you agree that actual facts or data will reduce the cumulative error created by assumptions.

*SUMMARY OF EXISTING DEMANDS			
Description	Demand (gpd)	Demand (gpm)	Demand/Lot (gpd)
Average Day	63,500	45	756
Average Winter Day	11,900	9	142
Maximum Month Ave. Day	189,600	132	2258
Ave. Day on Max. Week	209,700	146	2497
Max. Day (1.25 x Max. Week)	262,200	183	3122
Peak Hour (2.5 x Ave. Day)	-	329	-

*Existing Demands for 84 lots w/ 13 lots containing ARUs. Demands include current unaccounted for water.

*SUMMARY OF FUTURE DEMANDS			
Description	Demand (gpd)	Demand (gpm)	Demand/Lot (gpd)
Average Day	93,400	65	1038
Average Winter Day	13,600	10	152
Maximum Month Ave. Day	279,000	194	3100
Ave. Day on Max. Week	320,100	223	3557
Max. Day (1.25 x Max. Week)	400,100	278	4446
Peak Hour (2.5 x Ave. Day)	-	484	-

*Future Demands for 90 lots w/ 35 lots containing ARUs in the next 30-yrs. Demands include unaccounted for water (% consistent w/ existing) and an overall irrigation increase of 25% to account for additional irrigation demand associated with future increases in landscaping.

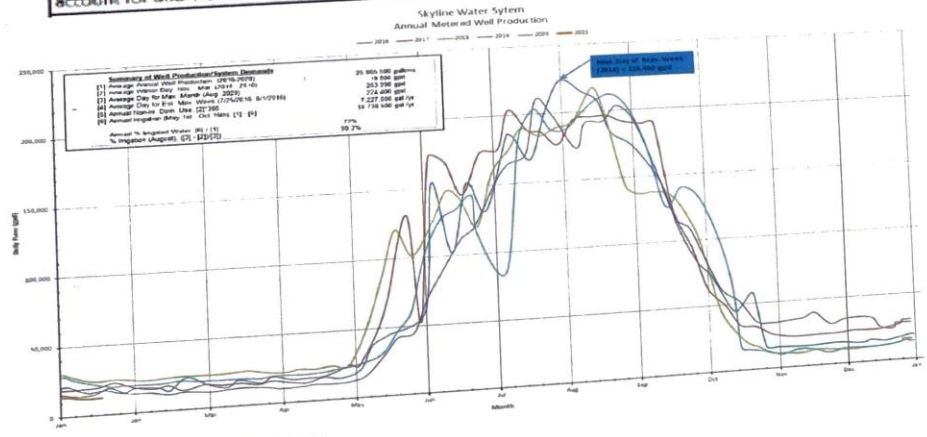


Figure 3.2: Skyline Ranch ISD Historical Water Well Water Production.

When do peak days and hours happen? How many days have peak hours?

Are there regulatory means to reduce peak days or peak hours that would substantially reduce instances?

How could regulatory means be implemented to lower demand and delay the need for a new well?

Funding and Revenue collection:

As the author of the WWDC report, you have only proposed one idea – the block rate schedule? Why?

Who had input on the decision to only provide one alternative revenue model in the WWDC report?

- Did you model or research any other revenue models?
- Research the cost of long-term operations for the proposed model?

- Research the liability for the district owning and being responsible for meters inside of homes?
- The distribution of the costs per ISD member for fairness or equity?

  Are you suggesting current users of water should pay the majority of the 30-year infrastructure?

  If there are unbuilt lots, unoccupied homes, and seasonal homes in Skyline, does the block method correctly allocate costs of infrastructure projects? If these lots are redeveloped in 5 years and create significant water features, will they have a free ride?

Given the assumption that proprieties will be redeveloped and future demands have nothing to do with the current usage of water, why should current water users be responsible for

• The current cost to develop a 30-year infrastructure? • The building of water reserves for the benefit of future

redevelopment of properties that are currently low water users?

Would it not be more appropriate to bill each lot equally for 30- year infrastructure? To build water reserves?

Please address your comment in the WWDC report:

For Skyline, it is recommended that a tiered water rate structure is not considered **until the District has the capability to collect monthly meter readings.** The data obtained from monthly meter readings will be invaluable to determining the average winter and summer use, **as well as excessive irrigation practices** which can be assessed for billing on a monthly basis. Currently meter readings are acquired bi-annually where it is would be impossible to allocate water use for each month which is typically the practice in the implementation of a tiered water rate structure.

Is this an opinion or fact?

What are excessive irrigation practices? Please define?

Given we have essentially unlimited water "Willet report" please define the reason to overcharge above the direct cost of water?

June 22, 2021 meeting:

In reading through the reports, there is a reference to a public meeting held on June 22, 2021, to review the contents of the WWDC report.

You ran the meeting and had a PowerPoint presentation.

What other information did you provide members before the WWDC meeting so they could prepare and be knowledgeable and provide comments on the WWDC report?

I personally requested a draft of the Nelson WWDC report draft before attending the meeting. I and others were told, "...that by law no member could see the WWDC report until posted by the WWDC." Is this your understanding of the WWDC rules?

Does this mean the statement from the June 22, 2021 meeting is inaccurate?

KB: Public meeting and hearing is required by State Statute for the Draft Presentation of the Skyline Water Level II Study. Purpose of the meeting is to give people a chance to review the findings and recommendations of the study. The hearing was provided to allow the public to comment.

How could the public comment be made when the report was never provided for review? To the best of your knowledge, who did have the WWDC report prior to the meeting?

Who made the decision to keep the WWDC report from members until August 16? Why did we wait until October 21 to have a public discussion of the WWDC report?

Are you aware the ISD board has already implemented many of the phase 1 suggestions without public input?

Do you consider this to be good transparency and collaboration with members?

Timeline of Actions:

In the WWDC Report, you have the proposed Phase 1 system improvements. The table below has the four suggested items:

FUNDING & PAYMENT SCHEDULE FOR PHASE 1 IMPROVEMENTS

Desc.	Grant/Loan Source	Application or Acquisition Due Date	Approval	Grant Amount	Loan Amount or Pay w/ SISD Funds	Interest, %	Term, yrs	Loan/Project Repayment Duration	Loan Origination Fee	Annual and or Onetime Payment
Residential Metering	DWSRF	Aug. 4th, 2021	Dec. 12th, 2021	$ -	$ (123,600)	0.00%	20	Mar. 2022 - Mar. 2041	$ 618	$ 6,180
Well #4 Easement	none	Sept. 2021	2022	$ -	$ (6,960)	-	-	Jul. 2021	$ -	$ 6,960
Well #4 Groundwater Exploration	WWDC/none	Sept. 2021	Nov. 9-10, 2021	$ 176,003	$ (58,668)	-	-	Mar. 2022 - Aug. 2022	$ -	$ 58,668
Motion & Application for Level III Funding for Storage and Supply Improvements by SISD	WWDC/ DWSRF	Sept. 1st, 2022	Early April of 2023 (legislature approval of Omnibus Water Bill)	$ 408,997	$ (234,168)	2.50%	20	Nov. 2025 - Nov. 2044	$ 1,171	$ 15,022
Totals:				$ 585,000	$ (423,395)					

Table 11.19: Funding Schedule.

Why should these projects not have had a public review, analysis, and discussion before proceeding?

Are any of the project's time-critical to the safety and soundness of water reliability?

What was the reason to exclude the members of the ISD from discussing the proposed Nelson Engineering solutions?

Are there alternative solutions to solve the identified problems?

Additional timeline item:

Josh, please tell us about this memo. Would you mind telling us about the program? What are all the required components? Was this all done before the release of the report on August 16 without public knowledge?

jkilpatrick@nelsonengineering.net

From: Shawn King <shawn.king1@wyo.gov>
Sent: Thursday, June 10, 2021 3:21 PM
To: jkilpatrick@nelsonengineering.net; Wade Verplancke; Kevin Boyce; Elizabeth Blackwell
Subject: Fwd: FW: DWSRF Program - Skyline Metering Project
Attachments: ApplicationDueDates (2).pdf

Josh,

The District can apply for the metering project. I have attached the application due date spreadsheet for our programs that will take you through the end of the year. The next application due date for the DWSRF program is 8/4/2021, and completed applications turned in for this due date would be taken to the 12/2/2021 SLIB meeting for approval. With the loan being processed for closing soon after the approval. If you are not familiar with the program it has gone through some recent changes. The biggest one for the application process is that we do not take the application to a board meeting until all of the required components of the application are completed. So, even though the chart says the corresponding SLIB date is 12/2/2021 it is contingent on the District completing all the requirements for the application.

The application can be downloaded from the following site location:
https://lands.wyo.gov/grants-loans/loans/drinking-water-state-revolving-funds

If you have any questions let me know.

---------- Forwarded message ---------
From: **Kevin Boyce** <kevin.boyce@wyo.gov>
Date: Thu, Jun 10, 2021 at 2:51 PM
Subject: Fwd: FW: DWSRF Program - Skyline Metering Project
To: Shawn King <shawn.king1@wyo.gov>
Cc: Wade Verplancke <wade.verplancke@wyo.gov>

KEVIN J. BOYCE, P.G.
Wyoming Water Development Office
6920 Yellowtail Road
Cheyenne, WY 82002
(307) 777-7626
kevin.boyce@wyo.gov
http://wwdc.state.wy.us/

---------- Forwarded message ---------
From: <jkilpatrick@nelsonengineering.net>
Date: Thu, Jun 10, 2021 at 2:11 PM
Subject: FW: DWSRF Program - Skyline Metering Project
To: Kevin Boyce <kevin.boyce@wyo.gov>

Kevin,

See email below sent to Beth.

Items not addressed in the WWDC report:

Josh, I would like to see the assumptions and costs you identified?
Storage has many benefits for a system of our size and seasonal demands.

Please discuss with us at the meeting the work you did on storage. Some specific areas below in **BOLD**

Part 3: Public Questions

Worthy Johnson and Warren Machol: Was an alternative considered to putting a new well vs. putting in a large tank?

JK: The alternative would be significantly more expensive from a capital cost. **PLEASE PROVIDE NUMBERS**

, O&M **PLEASE PROVIDE**
and replacement (life-cycle) standpoint **PLEASE PROVIDE**

. Issues include:
• Procuring a larger site (land purchase or easement) is likely problematic and would be
expensive. **Why WE HAVE A LOCATION**

• A large above-grade tank would be an eye-sore to the neighborhood, thus

tank burial (more expensive) **PLEASE PROVIDE NUMBERS -- WE JUST INSTALLED A 300,000 GALLON TANK IN CALIFORNIA --- LESS THAN WELL PROJECT --- PLEASE PROVIDE YOUR NUMBERS.**

(100,000 gallons) plus, if considered fire flow (60,000-gal) per WDEQ regulation

Add agenda item:

Information was requested over four board meetings ago. The lack of transparency combined with the board retaining the legal counsel is an unacceptable delay and waste of community resources.

Synopsis of Requested information: (see previous specific requests)

- Water data - for this tax year, billing was approved in July.
  - Complete water usage and taxation by ISD members--- as has always been made available.
  - Information and accounting related to specific system repairs budgeted and charged based on water consumption for each of the last 5 years
  - Total repair expenses incurred for each of the 5 years.
    - Variance from the budgeted estimate
  - Details for each repair event --- Include lot number and the scope of work done.
    - Cost for such work
    - Contractor used
    - Specificifications of original materials and repairs completed.
      - why beneficial for the water system longevity
  - Information and accounting of revenue collected (standard per 1000/ gallon fees and catch-up payments) based on billed water consumption for each of the last 5 years for projected repairs.
    - Tax and catch up Payments collect for each lot by year
      - Total revenue collected for each year
      - Variance from budgeted estimate to be collected
      - net addition funds collect for future system repairs.

Thank you for your assistance and cooperation in having an open and transparent governmental body.

All the best

Warren

WLM Associates
500 NW Ridge Rd
Jackson WY 83001
307 734 1920 (o)
917 455 7470 (c)

[Quoted text hidden]

Attachment #2

Gmail Jim Lewis <jamesl5546@gmail.com>

Request re: Formation of Water Committee

4 messages

Worthy Johnson <wjohnson@lawrencecapitalmgt.com> Sun, Nov 7, 2021 at 5:54 PM
To: "Kurt J. Harland" <thekurtharland@gmail.com>, Latham Jenkins <latham@circ.biz>, Jim Lewis <jamesl5546@gmail.com>
Cc: Corbin McNeill <camcneilljr@gmail.com>, "jwillott@aol.com" <jwillott@aol.com>, michael minter <trewil@hotmail.com>, Warren Machol <wlm.assoc@gmail.com>, "Anderson, Jeffrey B" <Jeffrey.Anderson@tcw.com>, Maria <mariajjohnson53@gmail.com>

Request to the SISD Board:

We (Worthy & Maria Johnson) asked for an Action on forming a Water Committee to assist the Board in **"gathering information"** that aids the SISD Board's decision-making process at the 21 Oct 2021 Board Meeting. At the time, you asked for more detail.

The Committee's initial goal would be to review and respond to the WWDC's 543 page study including:

-missing/overlooked issues that may well have long term implications for the rebuilt system

-additional analysis and engineering on various assumptions underlying the report's recommendations

-project prioritization based on funding alternatives along with system reliability and needs

-management of sub-projects within the scope of the larger project

-make recommendations when and if needed

One of the proposed committee members suggested the Water Committee have subgroups to focus on both **technical/engineering, management and construction** as well as **financial/ water usage/maintenance/overhead/ sinking fund/ rate structure**. We totally agree with this approach regarding the various supply, service and distribution aspects of the project.

We request the Board give "ex ante" approval for said Water Committee prior to formal adoption/vote at the 18 November Board Meeting. If you give us the tentative approval, we could possibly have information formulated to present at this meeting. Time is of the essence so as to integrate any suggestions with the Board's time table. Further delays could easily create additional unnecessary costs to the ISD.

The courtesy of a formal reply from the Board by Tuesday, the 12th of November, 12 noon, is requested and appreciated as the signees below are available to meet and discuss the WWDC/Nelson Engineering study. 4

Respectfully Submitted,

Corbin O'Neil

John Willott

Mike Minter

Warren Machol

Jeff Anderson

Maria & Worthy Johnson

The initial water committee members

Gmail Jim Lewis <jamesl5546@gmail.com>

Fw: Minter/Skyline Water

michael minter <trewil@hotmail.com> Wed, Aug 25, 2021 at 10:48 AM
To: Kurt Harland <thekurtharland@gmail.com>, Latham Jenkins <latham@circ.biz>, Jim Lewis <jamesl5546@gmail.com>

Kurt, Jim, Latham, I have spent considerable hours in the last week reviewing the Skyline Water Supply study. In addition, I have read the Skyline ISD minutes for the last 5 1/2 years, focusing on comments about the water system and the rates related thereto. To better understand the rate setting process and various approaches to rate setting, I've read the following and summarized the key takeaways:

1)Cost Allocation and Rate Design for Water Utilities funded by the National regulatory Institute, National Association of Regulatory Commissioners and American Water Works Association research Foundation.

-marginal cost is additional cost of producing a single incremental unit. Two essential elements of marginal cost-the cost of operating and the cost of expanding capacity. marginal cost is the key component for capital allocation, rate design and planning.
-water rates based on marginal cost provide foundation for attaining efficient utilization of water capacity and attaining efficiency on capacity investment. marginal cost signals customers that resource consumption has consequences
-ultimate purpose of marginal cost pricing is to send the correct price signals. those who cause peak demand pay for it and hopefully shift peak usage and reduce capital requirements.
-prices based upon average historical costs create the "illusion" that resources used at present or in the near future cost as much or as little as in the past. future costs are relevant for pricing decisions.

2)Deloitte Insights(3/2016)-The Aging Water Infrastructure: Out of Sight, Out of Mind

-current rates in the US do not fully cover water system renewal and replacement costs for infrastructure
-**one of the most commonly proposed solutions for recovering costs is by shifting a greater degree of cost recovery to fixed fees from usage-based fees**
-customer engagement efforts to increase conservation are likely to be part of the solution
-

3)U. S. EPA-Setting Small Drinking Water System Rates for a Sustainable Future

-In setting rate structure, evaluate characteristics of your system, customer base, options for maintaining predictability of rates and rate increases(better to increase 2%/year rather than 10% every five years).
-Consider the number of customers. **If your system is fewer than 500 people, the simplest approach might be to divide the revenue needs more or less equally. If more, use block rates.**
-Examine water use. If most customers use roughly the same amount a flat fee might make the most sense. If significantly different volumes are used, consider charging for

the amount used.
-Common Rate Structures: a)flat rate-customers pay same. May make sense for small water systems whose customers all use about the same amount. **Provides no incentive to conserve.** b)Increasing block rate -higher rates for successive blocks of usage. may also charge a fixed rate. **Encourages conservation and potentially postpones/eliminates need for upgrades/new equipment.**
c)seasonal rate structure. One rate for off peak, one for peak. Encourage conservation, reduce peak use, limit need to expand capacity.

4)Carl Brown(6/2021)-Getting Great Rates

-don't compare your system's rates to those of others. spend money on a good rate analysis to arrive at rates that your utility/ratepayers need.
-When your analyst says adopt these rates, do it. If you adopt the rates, you can tell ratepayers the facts-you are following the expert's advice . And very importantly, **doing that insulates you from conflicts of interest in the rate structures you adopt.**
-Analyst must determine cost-to-serve rates that will sustain the utility for a long time. This serves as a factual base line. A community's situation may suggest a variance from the base(older residents on fixed income, prevent rate shock, etc). Variance must be explained. Be open/honest.
-adjust rates annually to prevent rate shock
-Utilities(ISD) must hold substantial reserves
-Peak flow capacity costs should not be shared by all customers equally.
-As an official, in all things that you do you should strive to serve your customers and do it as transparently as is practical. It is the right thing to do.
-for a small system, a rate analysis should cost $6000 or less(our $7800 study charge seems reasonable)

5)Jackson Water System website

-use price to ration existing capacity
-rates need to be equitable, affordable and understandable

6)Wyoming Water Development(WWDC) site(**wwdc**.state.wy.us)

-contains info of every water district in Wyoming(metered or not, connection fees, avg monthly water bill, residential base rate, residential gallons included in base rate, rate per 1000 gallons above base rate, conservation steps implemented(seasonal pricing, piered pricing, time of day irrigation rates) and **use of tiered pricing (in 2018 Water System Survey Report, only 15 of 198 water districts used tiered pricing, and some districts did not report)**

I am sorry that I missed the meeting where the Skyline Water Supply study was discussed, but so did most of the residents of the subdivision(only 9 residents attended, not including ISD members). **While the study was emailed to those residents on listserv, how was it shared with others?**

Skyline ISD Minutes

-Clearwater operations(2/2018)-total replacement cost $1.836MM, annual depreciation $36,729;

water has been undervalued since much lower depreciation numbers have been used(current replacement cost now estimated at $5.8MM)
-Latham(2/2018)-roads treated as one system, but not water.
-for water grants need electronic water metering
-$300 base rate since 2000, increase to $475; usage before 2014 $1.25/g, 2014-16 $1.90(5/2018)
-usage charge $1.40(6/2018), Jim Lewis-water availability is not the issue, 3rd well not needed
Chris Thulin-$1.90 rate not to encourage conservation but increase reserves for infrastructure replacement(7/18)
-for years discussions about rate setting and fixed/variable/marginal cost use in rate setting

Current System/Infrastructure Deficiencies(Water Study)

-significant water loss-29-39% of water production(according to WWD, all water districts report 0-10%)
-increasing cost of maintenance/repairs caused by age of infrastructure(distribution, especially in the 1st filing)
-unclear if usage is properly billed(it is reported that old meters can underreport usage by 40%)
-summer irrigation represents 72% of annual usage and represented 90% in August 2018
-maximum weekly use from 2016-2020 has ranged from 199500 to 224400(in 2016)
-2016-2020 average production 26.0 million gallons
-Skyline has access to quality and unlimited water source(Willott study)
-storage is somewhat limited, pumps cannot operate simultaneously and demand cannot be met with one well out of service
-appropriate pressures cannot be provided for fire hydrants but currently grandfathered, none meet requirements of 1000/gpm and 2 hours production at 20psi
-usage currently exceeds water rights
-annual usage ranges from 20K gallons to over 1 million
-base rate $540 and $1.40/1K gallons**(how determined?**

Goals

-reduce water loss and properly bill for use
-plan for infrastructure replacement/upgrade, timing
-determine appropriate rate structure for operating costs, water reserve fund and capacity expansion
-address different needs of Skyline residents
-engineer for peak hour demand, increased customer usage driven by higher irrigation and increased ARUs(?)
-negotiate to increase water rights
-increase system pressure from 26 psi to 35 psi
-meet minimum flows for fire protection
-add backup power/increase reliability

Increase supply(pumps, upgrade 2nd well, complete 4th well)
Shift demand curve(seasonal rates, tiered pricing, time of day irrigation, etc)
Increase revenues(new meters, account for all water production/use)
Defer capital expenditures

Considerations/Assumptions

I. Growth in Usage.
-significant increase in number of ARUs?
-50% increase in water usage for homes with ARUs and 25% in irrigation per lot?
-ARUs increase from 13 to 35 by 2050?
-increase peak hour production from 329gpm to 484(47%) in 2050
-can currently produce 329gpm @26psi, need 35psi
-increase daily production from 262K to 400K(85%)

II. Clearwater/Nelson Engineering

-replacement cost $5.8MM, current depreciation should be $249K, not current $411K
-current infrastructure needs upgrading, replacing, expanding

-Nelson Water Study. "The SISD currently does not bill in accordance with **a tiered rate structure for water usage, which if implemented could likely cover the proposed rate increase to pay for future loans with minimal increases to the base fee.** This kind of rate structure is also referred to as an inclining tiered rate structure, or increase block rate structure which is commonly used to encourage water conservation. Tiered systems for residential water systems are most commonly comprised of three to four separate tiers, where water charge rate increases as the level of water usage per billing period increases."(p.87 Skyline Water Study).

Actually tiered rates(or increased base rates) would repay loans arranged to pay construction costs which benefit all users regardless of usage!

Examples of tiered pricing impact on Skyline users seems to be incorrect.
Current budget estimates $77K in water revenues. Use of Town of Jackson tiered rates would produce $93K. Nelson then used lower tiered rates than TOJ but produces $106K. Since lower rates are assumed, water revenues have to be lower.(p. 81)

III. Accounting Considerations
-rates have been based on historical, embedded capital costs, but should be based on current operating/future capital costs, otherwise water is being underpriced
-embedded water system capital cost for each filing?

IV. Repairs
-could not find record of repairs, cost, location of such

V. **Rate Structure**

-block and or seasonal rates to encourage conservation and defer infrastructure/capital expenditures ?
-education program for residents-usage, rate structure, benefits of off peak irrigation
-major capital improvements paid for equally or by filing?
-address lifeline rates through base rate

-phase in of rates to address rate shock?
-no tiered until electronic meters but tiered required for grants/loans?
-penalty for irrigation during the day?
-Town of Jackson water rates should not be used as example for Skyline rates. We don't have hospital, restaurant, car washes, commercial establishments, apartment buildings, etc.

WE. Timing
-After installation of electronic meters/water education program/block rates, monitor usage and determine timing/magnitude of need for 4th well

VII. **Capital Improvement Considerations**
-address leaks
-replace pumps to increase distribution pressures, meet fire hydrant requirements(flows/pressure)
-address need for simultaneous well operation and at variable speeds
-need for 4th well(500+ g/p/m)?

I think most residents never consider water system. It's just there, like the roads. Many never consider how the administration of Skyline occurs. I would assume that few read the minutes of the almost monthly meetings. I would also assume that I could count the residents in Skyline who have read the Water Supply study on two hands(and that includes the three of you). We all owe you a debt of thanks for the time you spend on ISD business.

I have a suggestion. How about forming a committee to assist you in exploring the needs of the community water system? You might coopt those who have been or might be critical. Obviously you wouldn't want it to be too big, but representative of the filings.

Best and thank you, Mike Minter