

SPECIAL COUNCIL  
March 30, 2016

Mayor Henry called the meeting to order at 3:00 p.m.

The Deputy Clerk made note that Councilmembers Skaug, Haverfield, White, Bruner, Raymond were present. Councilmember Levi was absent.

Mayor Henry said the purpose of the meeting was to update Council on the Wastewater Program.

Public Works Director Michael Fuss said that we have been dealing with this since 2008 and with the EPA since 2004. Staff has been working on items and the consultants have been working on items. There has been council turn over since 2004. The presentation will be starting from the beginning and where we are today. It is a big number at the end of the day at \$2 million.

Michael Fuss introduced Matt Gregg and Shelby Smith with Brown and Caldwell. Nampa City staff members that were also present were: Assistant Public Works Director Nate Runyan, Environmental Compliance Division Superintendent Leslie Basterrechea, Wastewater Superintendent Andy Zimmerman, Assistant Wastewater Superintendent Shannon Johnson, and Budget Analyst Jake Allen.

The agenda for the presentation was Wastewater Program Background, Regulatory Updates, Discharge Alternatives Update, Long-Term Alternatives Analysis Updates and Next Steps.

Important decisions regarding the City's Wastewater Program need to be made.

- Are the key principles from the 2011 Strategic Plan still appropriate?
- How should we consider economic development benefits in the decision-making process?
- How should Staff and the Wastewater Program Management Team (WPMT) proceed with alternative investigations?

Matt Gregg said that the goal was to get a common understanding of where we are at and what we are facing.

### **Wastewater Program Background**

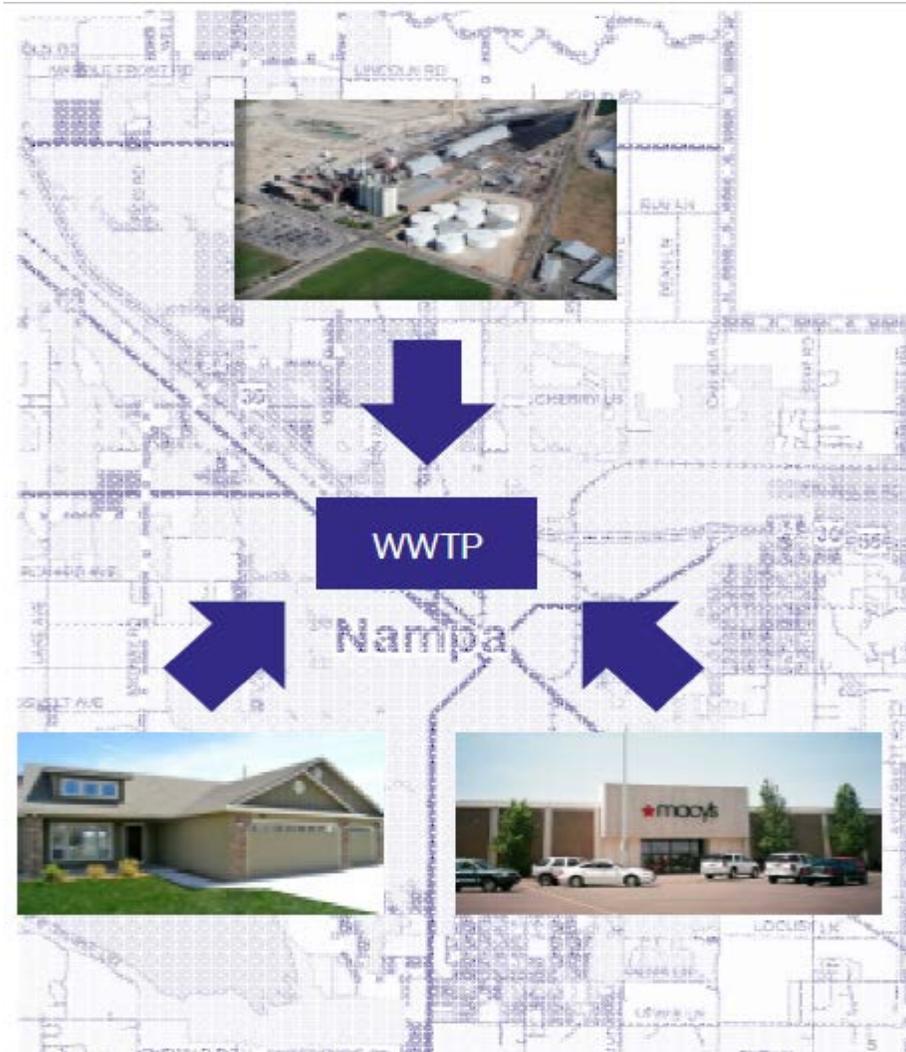
#### **The Challenge**

At its most basic level the City of Nampa produces:

- ~10 million gallons of domestic and industrial wastewater per day
- ~3.65 billion gallons of wastewater per year

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- Without treatment, raw sewage and industrial waste is discharged to Indian Creek



### Some Perspective on Quality of Raw Sewage

- Consider a football field
- Current flow – 30.5 feet deep
- Future flow – 61.3 feet deep

### Clean Water Act

- Enacted in 1972 to address several recent environmental disasters (Cuyahoga River catching on fire because of all of the oil that was on it.)
- Objective to “...restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” (33 USC §1251)

We want to be able to swim, drink and fish the waters that we have.

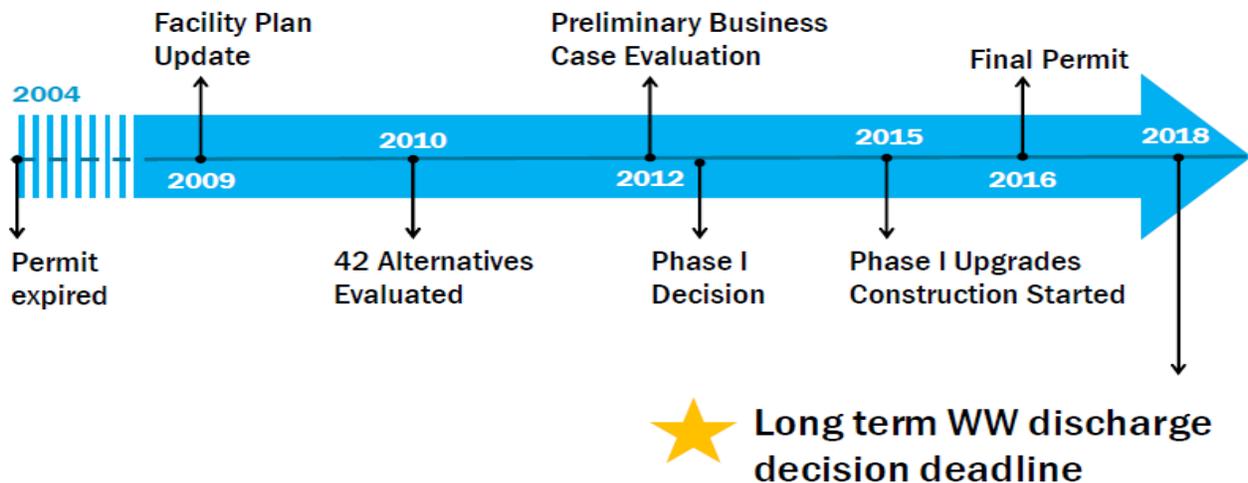
### Nampa Wastewater Program

- City’s National Pollutant Discharge Elimination System (NPDES) permit allows for discharge of treated wastewater under the Clean Water Act

The NPDES permit is issued by EPA or DEQ will eventually issue it. It allows the pipe that goes into the water to discharge treated water. The City of Nampa currently has a permit right now and it expired and has been on administrative extension since 2004. There is a new draft permit and the final permit is making its way to DEQ any day.

- City expects renewed NPDES permit with stringent discharge limits
- New limits require significant capital investments
- City implemented Wastewater Program to manage implementation of upgrades necessary to meet new permit limits

### Where We’ve Been



**Discharge Alternatives**



**Preliminary BCE Analysis (2012)**

Option	20-yr NPV Capital and O&M only	20-yr Risk and Benefit Costs	20-yr NPV with Risks and Benefits
#1: Direct Infiltration	\$99,466,000	+\$92,998,000	\$6,468,000
#2: Rapid Infiltration	\$97,509,000	-\$1,697,000	\$99,206,000
#3: Treat and Offset	\$62,665,000	-\$32,592,000	\$95,257,000
#4: Treat to EPA Levels	\$96,328,000	-\$53,692,000	\$150,020,000
#5: Do Nothing More	-	-\$280,966,000	\$280,966,000

*Note: Costs do not include costs to meet new temperature limits*

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Matt Gregg said Options #1, #2 and #4 are approximately equivalent.

The Infiltration Option was a preferred alternative when you look at risks and benefits.

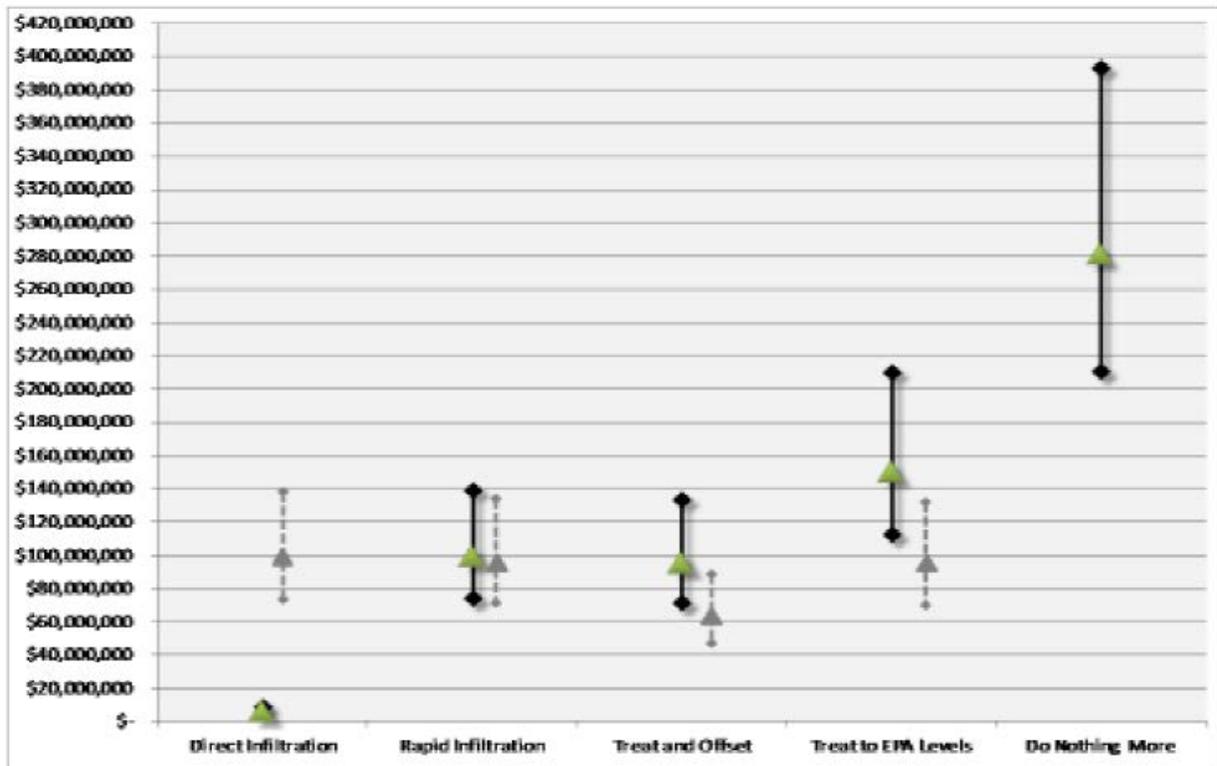
Mayor Henry asked if option one and four were the ones that the City had chosen.

Matt Gregg said to be fair, #4 is the fall back alternative. At the time #1, #2, and #3 all required additional investigation.

Councilmember Skaug asked Gregg to talk about temperature limit costs.

Matt Gregg said we have new temperature limits. These costs were never updated in these slides to address that.

### Preliminary BCE Analysis (2012)



### Preliminary BCE Analysis (2012)

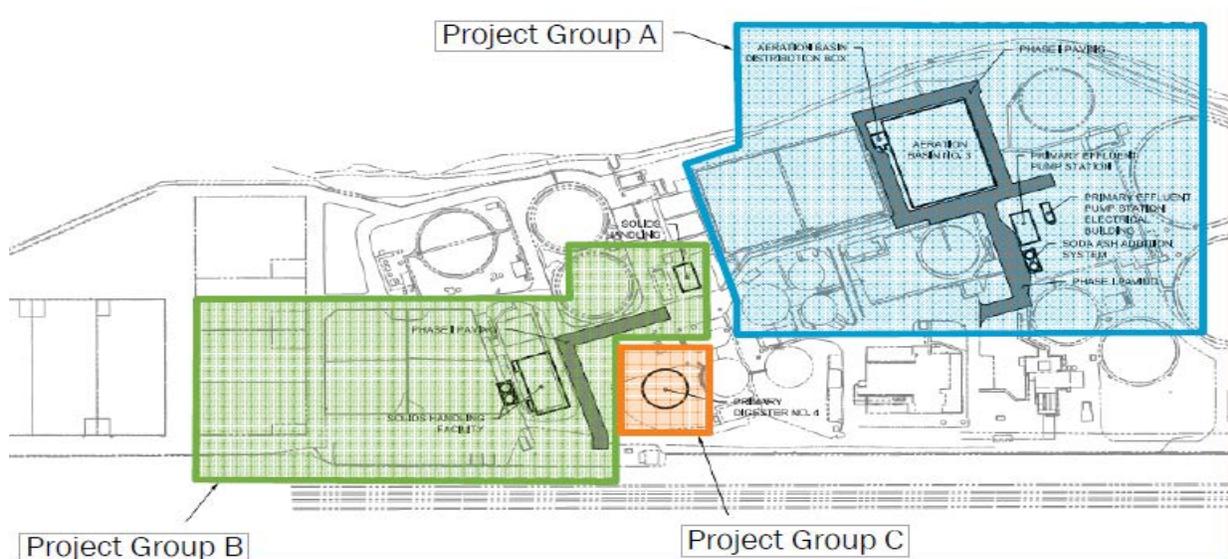
Key Takeaways

- Direct Infiltration
  - Risk costs front loaded and based on site characteristics
  - Many risk costs addressed through further study
  - Significant benefit from economic development potential
- Treat and Offset/Treat to EPA Levels
  - Risk costs back loaded
  - Significant risk based on emerging regulatory issues
  - Limited economic development benefits
- Do Nothing More
  - Most significant risk costs

### Phase I Upgrades

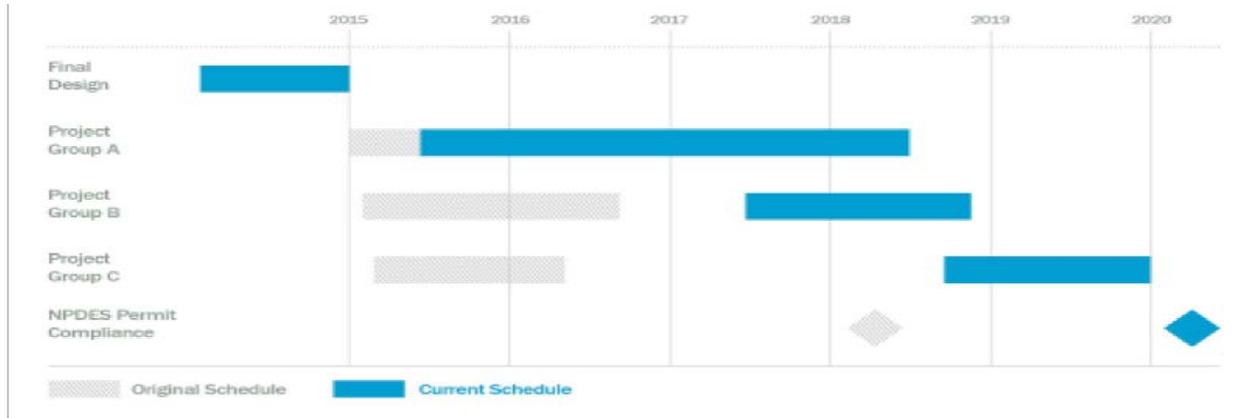
- WPMT identified a common set of projects supporting all discharge alternatives
- City Council decided on a phased approach (February 2012)
- Phased construction provides advantages:
  - Larger capital expenditures postponed
  - Regulatory flexibility maintained
  - Time for continued investigation of alternatives

### Phase I Upgrades Overview

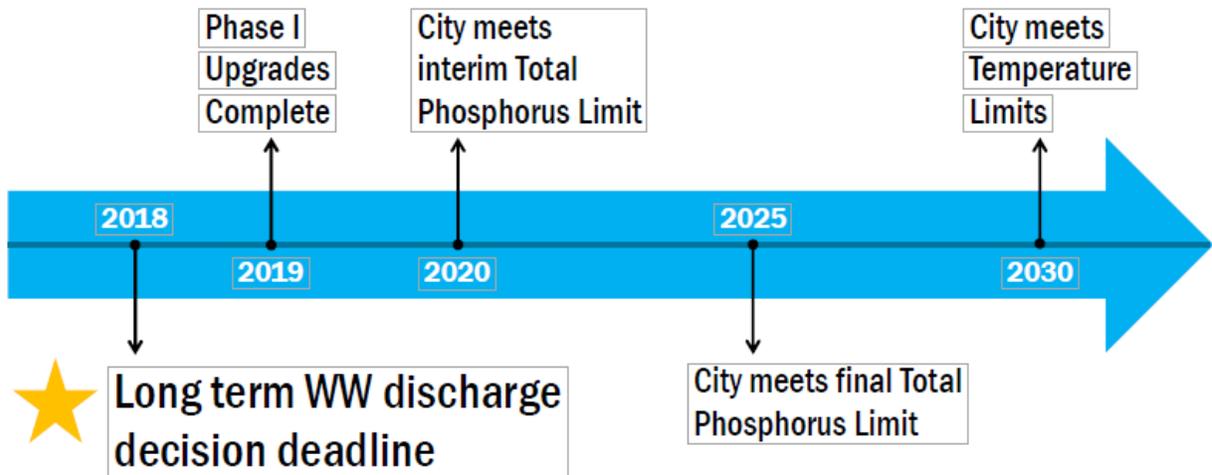


Phase I is broken into three project groups and it is generally a pump station, a new aeration basin (Project Group A), a new solids handling building (Project Group B) and then a new digester (Project Group C).

### Phase I Upgrades Schedule



### Where We're Going



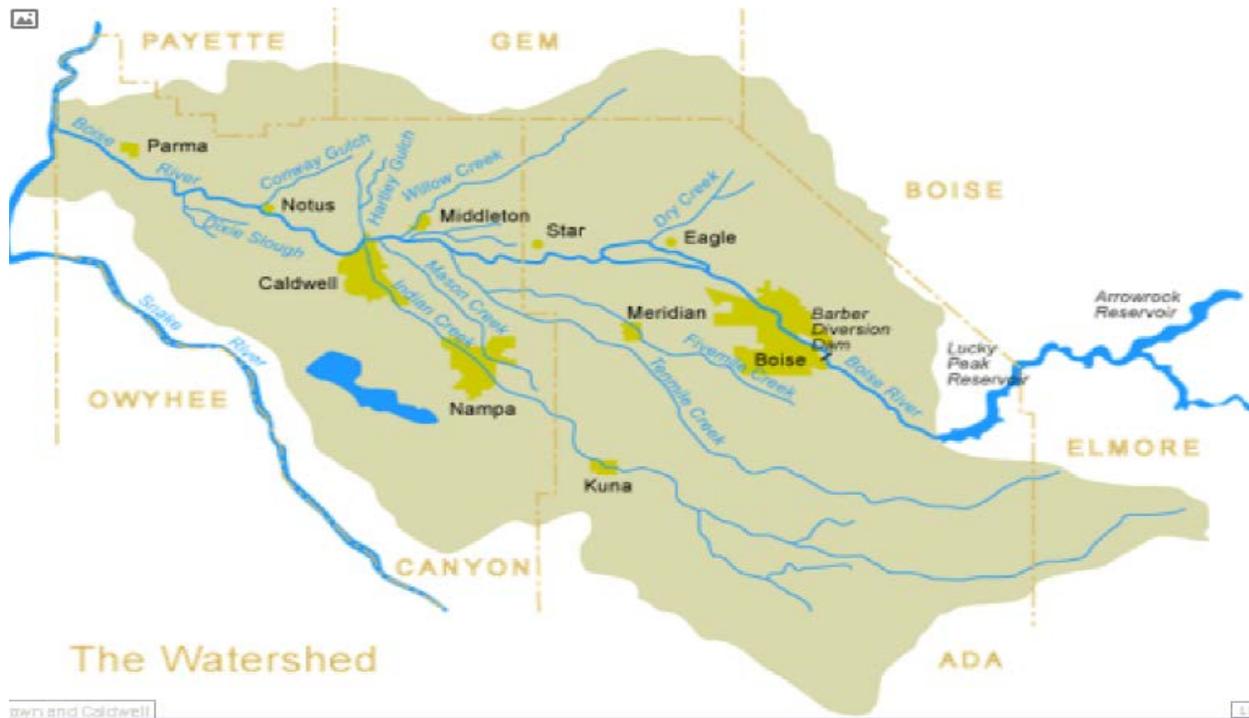
Councilmember Haverfield asked for a description of the other phases, what they included and what their critical path was.

Matt Gregg said Phase II and Phase III are the alternatives we will talk about today. Generally, Phase II is the time frame between 2020 and 2025 to meet the final phosphorus limit. Phase III is 2025 - 2030 to meet temperature. Infiltration can meet both in Phase I. It may be just Phase II meets phosphorus and temperature.

### Regulatory Updates

One of the major drives that's happened since 2012 and one of the reasons that delayed the decisions that had some benefits was there has been a lot of regulatory changes both at the State level and with the City's permit. One of the biggest ones was the lower Boise total phosphorus TMDL. The lower Boise water shed covers from the Snake River on the western side all the way to Lucky Peak and then a little up to Elmore County. It generally consists of the lower Boise River and its major tributaries like Indian Creek, Mason Creek and Conway Gulch. DEQ has known that the lower Boise was impaired for phosphorus for a number of years. The Snake River had a TMDL completed back in the mid 2000's and DEQ started the one on the Lower Boise about 2012.

### Lower Boise River Phosphorus TMDL



### Lower Boise River Phosphorus TMDL

- TMDL focuses on algae reduction (It is mainly an aesthetics thing. At some levels, it can cause fish habitat problems.)
- DEQ hosted 100+ meetings to develop the TMDL
- Staff and WPMT participated throughout process
  - Policy input
  - Technical reviews

## WWTP WASTELOAD ALLOCATIONS TO MEET TARGETS

May 1 – September 30

**100 µg/L (0.1 mg/L)**

October 1 – April 30

**350 µg/L (0.35 mg/L)**

## STORMWATER WLA AND LA TO MEET TARGETS

Stormwater (wet weather)

↓ **42%**

Non-stormwater (dry weather)

↓ **84%**

### Clean Water Act Goal:

*“Restore and Maintain the Chemical, Physical, and Biological Integrity of the Nations Waters”*

1. Use Classification
2. Instream Criteria
3. TMDLs
4. NPDES Limits
5. Other Control Strategies

### NPDES Permit Negotiations

- NPDES permit negotiations began in 2012
- City and WPMT have held over 15 meetings with EPA and IDEQ to negotiate permit
- Draft permit was released for public comment in August 2015
- City awaiting final NPDES permit from EPA

### NPDES Permit Negotiations Priorities

- 15-year schedule of compliance for temperature limits
  - Allows for time to fully understand impacts of Phase I/II on effluent temperature
  - Time to fund, design, and construct any needed upgrades
- Interim winter TP limits supported by Phase I Upgrades
  - City has made decisions and investments assuming no winter TP limits

- Limits should support current Phase I Upgrades
- Permit based on monthly rather than weekly TP limits
  - Consistent with findings of Lower Boise River TMDL
  - Additional operational flexibility

**NPDES Permit Negotiations**

Constituent	Existing Limits	Existing Operations	Expected Final Limit	Percent Reduction	Expected Compliance Schedule
Phosphorus	None	5 - 6 mg/L	0.1 mg/L (Summer) 0.35 mg/L (Winter)	98%	10 years
Temperature	None	23 - 24 °C	19.0 °C	26%	15 years
Mercury	None	0.015 µg/L	0.011 µg/L	27%	10 years
Cyanide	None	4 µg/L	4.75 µg/L	--	--
Copper	None	40 - 100 µg/L	13.4 µg/L	66%	10 years

Councilmember Haverfield asked about temperature.

Matt Gregg said one of the priorities was to get a 15-year schedule compliance for temperature limits. Half or more of the existing treatment plant is being torn down. That wreaks havoc on trying to collect data. We have to design something to reduce temperature by two or three degrees. We have spoken with EPA and asked for time to walk through the process. Let's make an informed decision. Let's make it based on the best available data. EPA understands what the problem is. The initial indications are that we should have 15 years to comply with the temperature limits.

Councilmember White asked if there a small community and they couldn't afford to take care of what is necessary, how would that feed into everything?

Matt Gregg said EPA and DEQ both have some programs that if the rates exceed a certain threshold of income, there could be some relief or a longer schedule of compliance. In some cases, there is funding available. The targets are the same but how it is administered might be slightly different.

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They use the median household income and the threshold is about two and a half percent. There are communities in the valley that are facing that.

Councilmember Haverfield asked if there were other approaches to try and keep the temperature down than just putting water over the top of “black rocks”. It is still exposed to radiation.

Matt Gregg said that the treatment for the “black rocks” is actually a process at the treatment plant. That is actually going away. We have looked at other ways to control temperature. Those aren’t necessarily there to treat temperature. They impact temperature. We are looking at removing those.

Councilmember Haverfield asked if there was a way to keep the levels of temperature down by the virtue of some sort of covering even if it was to supply a roofing membrane that is reflective. Something that would allow the temperature of the effluent below it to maintain a cooler temperature instead of the radiation from the sun hitting it.

Matt Gregg said some things could be done on aerations basin. The bigger problem is that temperatures are just hotter in the summer months. The problem is that it is hotter coming in than it needs to be going out. Trying to get it cooler at the household level is much more difficult than at the treatment plant. We have looked at different ways to do that. One is to hold it in ponds during the night and letting it cool that way. The hard part is that we are dealing with so much water and anything we do at that scale is that it has cost complications. The general trend has been towards cooling towers. It is not as much solar impact as it is just what is coming in the door at the treatment plant.

## **Discharge Alternatives Updates**

### **Current Alternatives**

- Alt #1A – Direct Infiltration (Summer only)
- Alt #1B – Direct Infiltration (Year-round)
- Alt #3A – Treat and Offset
- Alt #3B – Treat and Trade
- Alt #3C – Treat and Irrigation Discharge
- Alt #4A – Treat and Discharge
- Alt #4B – Treat and Discharge Class A Reuse
- Alt #5 – Do Nothing More

### **Key Changes from Preliminary BCE**

- Eliminated Alt. #2 from consideration
- Add four alternatives based on more current information

- Alt #1B – Direct Infiltration (Year Round)
- Alt #3B – Treat and Trade
- Alt #3C – Treat and Irrigation
- Alt #4B – Treat and Discharge Class A
- Criteria and cost for all alternatives have been updated to reflect current conditions

**Alt #1A – Direct Infiltration (Seasonal)**



Class A recycled water pumped to infiltration site and discharged to infiltration basins (summer only)

**✓ Major Benefits**

- Economic Development
- Water Quality Credits
- 100% Water Reuse (offset for Total Dissolved Solids)

**⚠ Major Risks**

- Background Water Quality (Total Dissolved Solids)
- Regulation of Additional GW Constituents
- Private Well Discharge Water Rights

**Alt #1B – Direct Infiltration (Year-round)**



Class A recycled water pumped to infiltration site and discharged to infiltration basins (year-round)

**✓ Major Benefits**

- Economic Development
- Water Quality Credits
- 100% Water Reuse (offset for Total Dissolved Solids)

**⚠ Major Risks**

- Background Water Quality (Total Dissolved Solids)
- Regulation of Additional GW Constituents
- Private Well Discharge Water Rights

Councilmember Skaug wanted an explanation of Water Quality Credits.

Matt Gregg said that one of the things that is actually developing is the ability to trade pounds of phosphorus with another entity. So if we take the water out of the creek, we are removing 15 pounds of phosphorus that we have been allocated TMDL per day. That's the .1 to 0. We can take that 15 pounds per day and sell it to Caldwell, Boise, Meridian or some agricultural partner that needs to reduce that to meet their TMDL allocations. There is a benefit there.

### Study Property 5 Investigations

- 400 acres of agricultural land
- City has negotiated an Option to Purchase with current owner
- Additional investigations are occurring to confirm the viability of the site



### Study Property #5 Investigations



- Ten shallow test pits and short-term infiltration tests
- Results indicated an average infiltration rate of 1.2 in/hr - meeting preliminary feasibility requirements

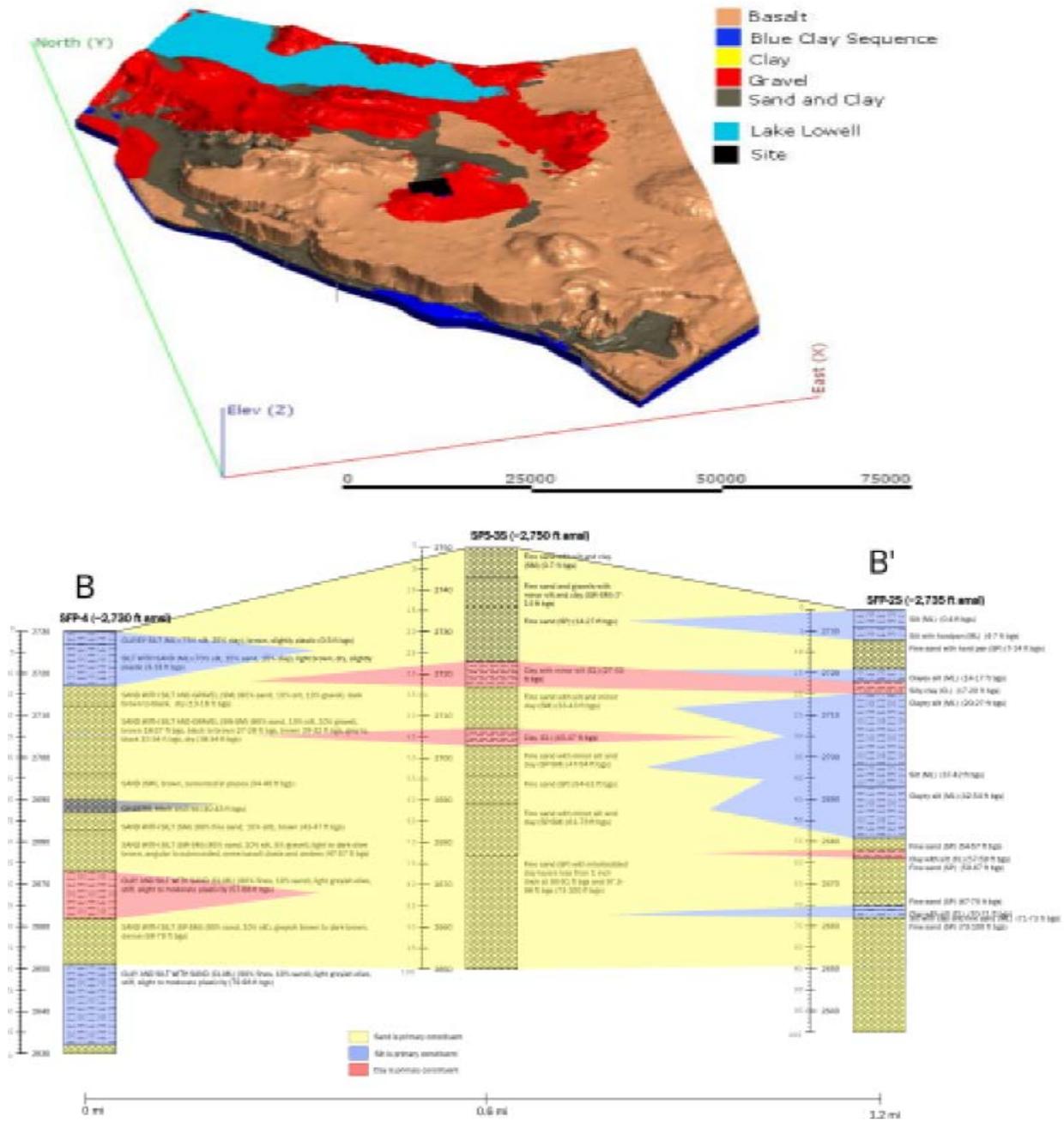
Councilmember Haverfield asked if the water that is being taken to this property was potable.

Matt Gregg said it would be a Class A recycled water. It is not potable water as it is defined in the Drinking Water rule but it is the highest standard of recycled water that the State has. It has all the allowed uses that we can have for recycled water. Idaho does not have a direct potable reuse rule yet. Cities in California are looking at piping recycled water into drinking water plants and distributing it.

Councilmember Haverfield said then it is only good for irrigation purposes.

Matt Gregg said it is good for irrigation and industrial reuse. There are a number of things, dust control on construction sites.

Councilmember Haverfield asked if a business like Micron could use a lot of water in their wafer production. (Absolutely.) So the Economic Development Office could be selling that concept. (Yes.)



Potential Study Property 5 Next Steps



- Focus going forward is to confirm viability of Study Property #5
- Evaluation supports City’s schedule to select preferred long-term alternative

**Alt #3A – Treat and Offset**

Upgrade WWTP to reach 0.35 mg/L then achieve remaining water quality goal via offset facility

**✓ Major Benefits**

- Net Environmental Benefits

**⚠ Major Risks**

- Regulation of Additional Surface Water Constituents
- Year-Round Total Phosphorus Limits below 0.35 mg/L

Councilmember Raymond asked if “Treat and Offset” had anything to do with temperature.

Matt Gregg said it didn’t. It is only for phosphorus compliance. We looked at temperature off-sets or temperature treating. All temperature in all of the alternatives is either infiltration or it is temperature treatment at the plant because that has been most cost effective.

**Alt #3B – Treat and Trade**



Upgrade WWTP to reach 0.35 mg/L then achieve remaining water quality goal via trading program

**✓ Major Benefits**

- Net Environmental Benefits

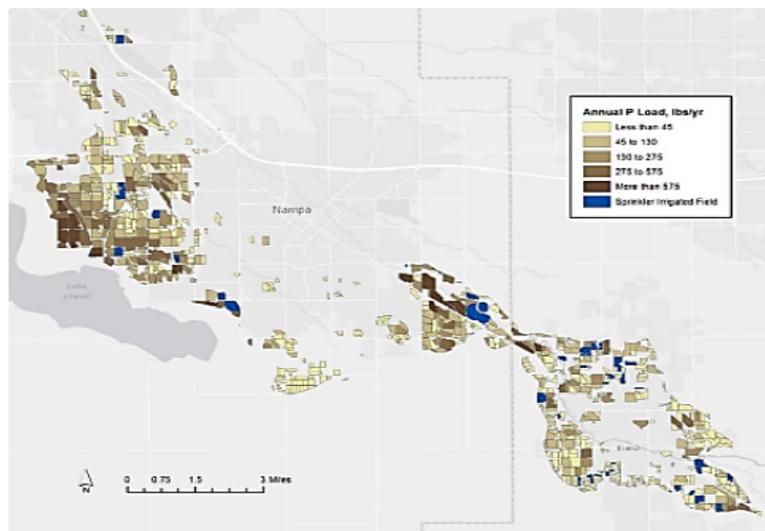
**⚠ Major Risks**

- Regulation of Additional Surface Water Constituents
- Year-Round Total Phosphorus Limits below 0.35 mg/L

Matt Gregg said “Treat and Trade” is a permutation of “Treat and Offset”. The difference is that you can still treat only to a certain level at the treatment plant. Instead of building your own “offset” facility to take out those pounds, you contract with someone to provide those pounds to you. So the State is setting a trading framework to purchase phosphorus pounds on the open market.

**Reviewed potential TP reductions through trading in Indian Creek watershed**

**Preliminary results suggest that sufficient credits are available for TP trading**



**Alt #3C – Treat and Irrigation Canal Reuse**



Upgrade WWTP to treat to 0.35 mg/L total phosphorus, then discharge Class A reuse water to irrigation canal in the summer

**✓ Major Benefits**

- Economic Development
- Net Environmental Benefits

**⚠ Major Risks**

- Regulation of Additional Surface Water Constituents
- Year-Round Total Phosphorus Limits below 0.35 mg/L
- Contract Negotiations

Mayor Henry said we hadn't done much on "Treat and Offset". (Right.) This is just informational. You aren't trying to say that we are going to do "Treat and Offset" now. (No.) I just wanted the clarity there.

**Alt #4A – Treat and Discharge to Indian Creek**



Upgrade WWTP and continue discharging to Indian Creek

**✓ Major Benefits**

- None identified

**⚠ Major Risks**

- Regulation of Additional Surface Water Constituents
- Year-round total phosphorus limits below 0.35 mg/L

**Alt #4B – Treat and Discharge to Indian Creek**



Upgrade WWTP, discharge to Indian Creek and provide Class A reuse water to industries

✓ **Major Benefits**

- Economic Development
- Water Quality Credits

⚠ **Major Risks**

- Regulation of Additional Surface Water Constituents
- Year-round total phosphorus limits below 0.35 mg/L

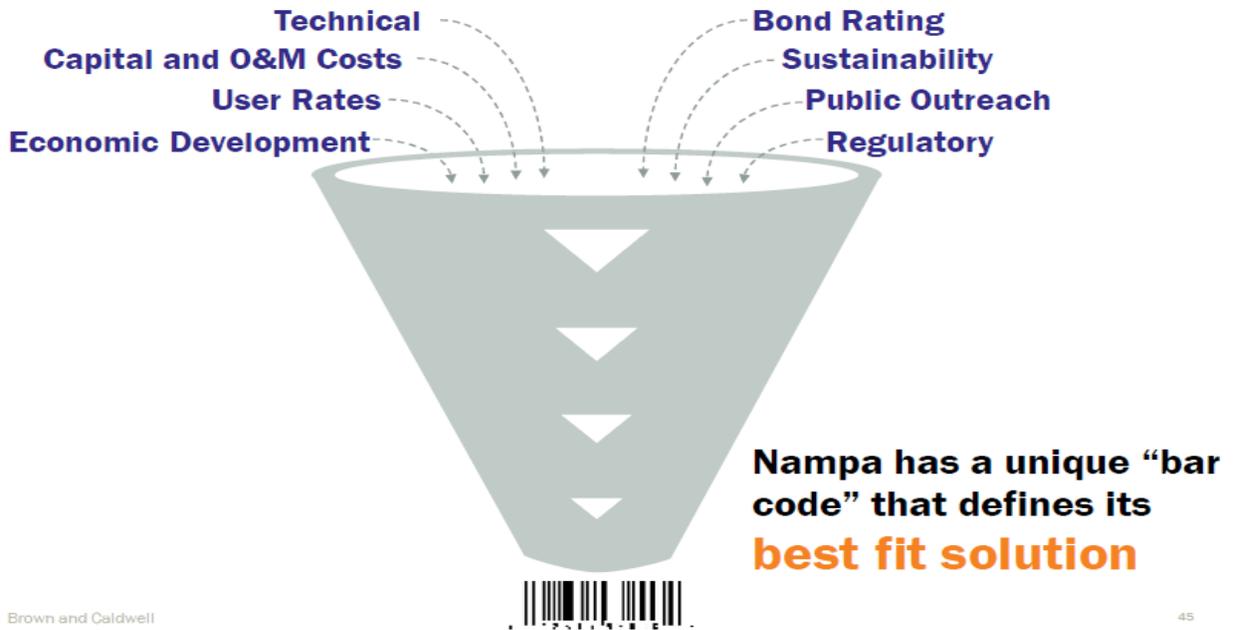
**Alt #5 – Do Nothing More**

Refuse to upgrade WWTP and maintain current treatment levels.

- No upgrades to WWTP
- Continue discharging to Indian Creek
- Discharge will violate total phosphorus and temperature limits
- Willful negligence of the Clean Water Act

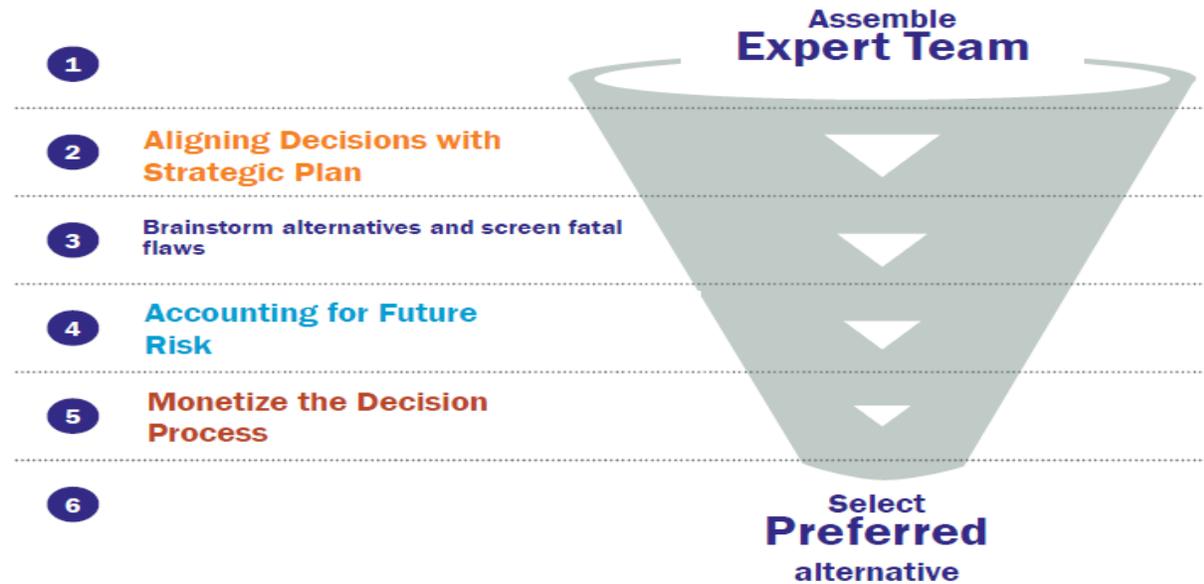
**Long Term Alternatives Analysis Updates**

**Finding the Best Fit for Nampa**



Matt Gregg said this is a big decision for the City. It is actually one of the bigger decisions the City will make in quite some time.

### Unique Steps in the BCE Process



### Aligning Decisions with 2011 Strategic Plan

Consider **economic ramifications** of environmental actions



Consider long-term regulatory risk

Include **economic development impacts** of decisions



Be the **community of choice** for industry

#### Step 2: Identify Levels of Service

- City's Strategic Plan defines goals and objectives
- Wastewater levels of service should consider Strategic Plan goals and priorities
- Ensure Nampa's wastewater decision aligns with City Strategic Plan

#### Example: What car do you own?

- Why? (typically values-based)
- How do you know you're satisfied?
- How do you measure your satisfaction?
- What are you willing to pay more for?

Utility



Safety



Performance/Speed



Price



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Decision // Are the key principles in the 2011 Strategic Plan still appropriate as the foundation to decision making? Economic development; Cost; Regulatory control.

Councilmember White said that once you're given a phosphorus level or a temperature and then you accomplish that, then they change the numbers. That makes it really hard to look at costs.

Matt Gregg says that goes to the regulatory control. We want to be in the position to let them dictate to us what the limits are or is there a better way to do it where we can control how we produce and discharge water.

Councilmember White asked if that was possible.

Matt Gregg said history has shown us that the NPDES Rules have changed more over time than the Ground Water Rule has.

Councilmember Raymond said it looks like it is backwards. Regulatory control should be our first priority and make sure the EPA is satisfied. If it is not, we have to adjust it until it is. And then the cost, we do the best we can to make sure we appease the EPA.

Mayor Henry said he didn't know if everything was prioritized. There were just three issues.

The question is, the principles that were outlined in the 2011 Strategic Plan, are they still appropriate in our discussions today? I think that if it were a 2011 Plan, the only person that was on the Council at that time was Pam White. The rest of us are all new. So your question is, is that plan still valid? (Correct.)

So we are going to vote on that one. So I entertain a motion with a second that the Strategic Plan from 2011 is still applicable.

**MOVED** by Haverfield and **SECONDED** by Skaug that the 2011 Strategic Plan is Still Applicable. The Mayor asked for a roll call vote with all Councilmember present voting **YES**. The Mayor declared the

**MOTION CARRIED**

Matt Gregg said we have these priorities that we are looking at. One of the things we have looked at as we've moved through this is looking at risks and benefits is a more conservative approach than decision making.

One of the best examples was really eye opening when we went through this in 2012 was that if you just put Capital and O&M costs up and do nothing more, it has zero dollars. It is the lowest cost

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alternative every time. Because you are not doing anything. But when you start to think about risk, there are some long term implications there. We know that EPA will likely come in and fine us.

Step 4: Developing Capital, O&M, Risk, and Benefit Costs.

Data collected on all costs

- Capital, Operations and Maintenance, Risks, and Benefits Costs.

Account for risk and benefit costs

- More conservative approach
- Better long-term decision making
- Provides apples to apples comparison
- Reduces subjectivity of evaluation
- Consider care insurance rates

### **Accounting for Risk**

If we account for risk EVERYDAY, why not account for risk in one of the single largest capital decisions the City will make?

$$\begin{array}{l} \text{Probability of Occurrence } \mathbf{X} \\ \text{Consequence of Occurrence} \\ \hline = \text{Risk Cost} \end{array}$$

Step 5: Perform Net Present Value Analysis

Description	Capital	Benefits	O&M	Risk	NPV
Project A	\$1 M	\$3 M	\$1.5 M	\$1 M	(\$6.5 M)*
Project B	\$2 M	\$1 M	\$1 M	\$4 M	(\$8 M)

\*Lowest cost alternative

## All considerations for the decision relate back to dollars

- Capital
- Operations and maintenance
- Risks
- Benefits



### BCE Results

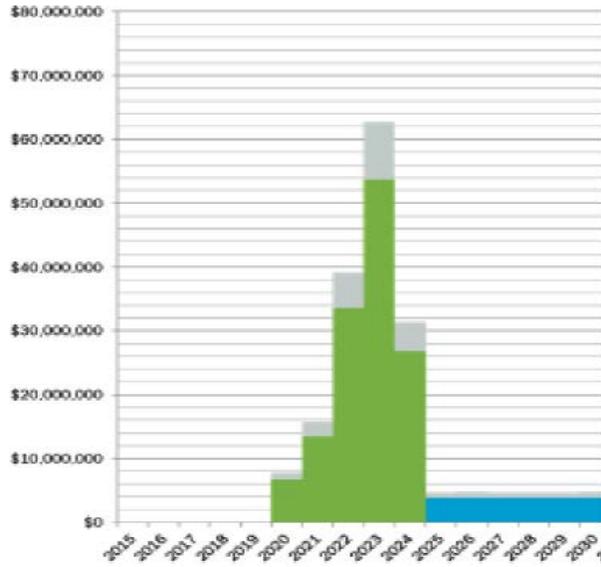
#### Analysis Assumption

- Analysis period – 30 years (2015 – 2045)
- Capital costs are spread to match projected delivery
- Capital costs are total project costs (i.e. both design and construction costs)
- Capital costs are Class IV estimates
  - Accuracy range of -30% to +50%

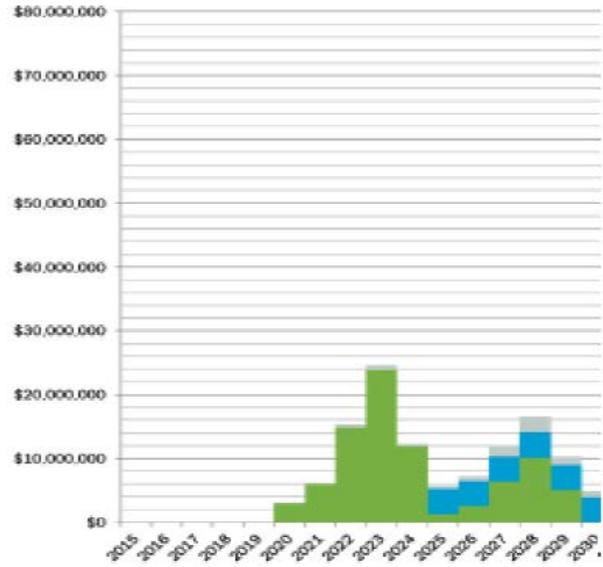
### Capital Costs

Alternative	Capital Cost	Range
Alt #1A – Infiltration (Seasonal)	\$137,015,000	\$96M - \$205 M
Alt #1B – Infiltration (Year-Round)	\$134,140,000	\$94M - \$201M
Alt #3A – Treat and Offset	\$98,141,000	\$67M - \$147M
Alt #3B – Treat and Trade	\$88,344,000	\$62M - \$133M
Alt #3C – Treat and Irrigation	\$91,537,000	\$64M - \$137M
Alt #4A – Treat and Discharge	\$92,936,000	\$65M - \$139M
Alt #4B – Treat and Discharge Class A	\$110,118,000	\$77M - \$165M
Alt #5 – Do Nothing More	\$0	\$0

Differences in Cash Flow



Alt 1B - Direct Infiltration (Year Round)



Alt 4A - Treat and Discharge

Operating Costs

Alternative	Operating Cost
Alt #1A - Infiltration (Seasonal)	\$86,134,000
Alt #1B - Infiltration (Year-Round)	\$81,082,000
Alt #3A - Treat and Offset	\$93,086,000
Alt #3B - Treat and Trade	\$87,899,000
Alt #3C - Treat and Irrigation	\$75,605,000
Alt #4A - Treat and Discharge	\$83,505,000
Alt #4B - Treat and Discharge Class A	\$90,725,000
Alt #5 - Do Nothing More	\$0

**Capital and O&M Net Present Value**

Alternative	Capital and O&M NPV
Alt #1A – Infiltration (Seasonal)	(\$199,234,000)
Alt #1B – Infiltration (Year-Round)	(\$189,411,000)
Alt #3A – Treat and Offset	(\$167,720,000)
Alt #3B – Treat and Trade	(\$153,912,000)
Alt #3C – Treat and Irrigation	(\$148,116,000)
Alt #4A – Treat and Discharge	(\$154,908,000)
Alt #4B – Treat and Discharge Class A	(\$176,916,000)
Alt #5 – Do Nothing More	\$0

**Capital and O&M Summary**

**CHANGES FROM 2012**

- Temperature moved from risk to capital cost
- Winter phosphorus limits
  - Filters required for trade or offset
  - Additional infrastructure for all alternatives
- Selection of infiltration site
  - Additional pipeline length
  - Purchase price for property

**SUMMARY**

- Infiltration alternatives have front-loaded capital costs
- Other alternatives allow capital costs to be spread over longer period
- All alternatives are likely to require debt financing and/or additional rate increases

**Risk Costs**

Alternative	Risk Costs
Alt #1A – Infiltration (Seasonal)	\$46,548,000
Alt #1B – Infiltration (Year-Round)	\$42,146,000
Alt #3A – Treat and Offset	\$60,710,000
Alt #3B – Treat and Trade	\$60,149,000
Alt #3C – Treat and Irrigation	\$61,144,000
Alt #4A – Treat and Discharge	\$53,809,000
Alt #4B – Treat and Discharge Class A	\$46,548,000
Alt #5 – Do Nothing More	\$309,783,000

**Example: Technical Risk Cost**

## Example: Technical Risk Cost

### TDS Removal Requirements

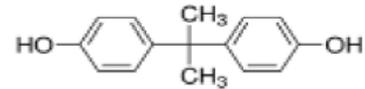
- TDS is an aesthetic constituent
- Limit based on GW Rule (500 mg/L) or background water quality (TBD)
- Reuse Permit negotiations would determine final limit



Risk	Approx. Capital Cost	Annual O&M Costs	Probability of Occurrence	Annual Risk Cost (Capital)	Annual Risk Cost (O&M)
TDS Removal	\$42M	\$1.2M	50% (2025)	\$21M (2025)	\$600K (2025)

### Future NPDES regulations of microconstituents

- Pharmaceuticals
- UV blockers (sunscreen)
- Fragrance materials
- Polycarbonates
- Plasticizers



Risk	Approx. Capital Cost	Annual O&M Costs	Probability of Occurrence	Annual Risk Cost (Capital)	Annual Risk Cost (O&M)
Microconstituent Limits	\$39M	\$1M	5% (2025)	\$1.95M (2025)	\$53K (2025)
			15% (2030)	\$5.87M (2030)	\$158K (2030)
			25% (2035)	\$9.78M (2035)	\$263K (2035)
			35% (2040)	\$13.69M (2040)	\$368K (2040)
			20% (2045)	\$7.82M (2045)	\$210L (2045)

Brown and Caldwell

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### Benefit Costs

Alternative	Benefit Costs
Alt #1A – Infiltration (Seasonal)	\$38,957,000
Alt #1B – Infiltration (Year-Round)	\$43,417,000
Alt #3A – Treat and Offset	\$638,000
Alt #3B – Treat and Trade	\$638,000
Alt #3C – Treat and Irrigation	\$17,644,000
Alt #4A – Treat and Discharge	\$0
Alt #4B – Treat and Discharge Class A	\$21,857,000
Alt #5 – Do Nothing More	\$0

### Economic Development – 2012 Analysis

- Class A recycled water has great value
- Discussed potential value with Economic Development Director
  - Several recent industries almost located to Nampa
  - Free water could have influenced decision

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Company Type	Water Needs (gal/day) (annual value)	Jobs Created	Annual Economic Impact	Probability	Annual Benefit Cost *
Chemical Manufacturing	2,600,000 (\$1,446,000)	995	\$1,100,000,000	2%	<b>+\$22,000,000</b>
Solar Cell Manufacturing	500,000 (\$278,000)	950	\$530,000,000	-	-
Data Center	2,880,000 (\$1,602,000)	150	\$29,000,000	80%	<b>+\$22,976,800</b>

\* Analysis comparative only so the benefit cost of only one additional company estimated

**Economic Development – 2016 Analysis**

**Same Approach as 2012 – Total Economic Impact**

Company	Jobs	Annual Economic Impact
A – Manufacturing	525	\$279,022,000
B – Manufacturing	1,000	\$531,469,000
C – Agriculture	150	\$26,784,000

**Revised Approach – City Tax Revenue**

Company	Jobs	Annual Tax Impacts
A – Manufacturing	525	\$2,630,000
B – Manufacturing	1,000	\$5,011,000
C – Agriculture	150	\$466,000

Decision // How should we consider economic development benefits as part of the decision-making process? Is it the total economic impact in the community? Or is it just what is coming into the City?

Councilman Haverfield said for comparison purposes is Boise’s Dixie Drain Project creating Class A water?

Matt Gregg said Boise’s Dixie Drain Project is not creating Class A water.

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Councilman Haverfield said from a competitive standpoint, if we were looking at that path, we would be elevating ourselves as far as from the comparative standpoint of potential economic growth?

Matt Gregg said yes. The City of Meridian does have a Class A program. They currently use it in parks and maybe in one carwash. They have kind of started down that path. That has been one of the options they have been looking at.

Councilman Haverfield asked if it was similar to what we are looking at.

Matt Gregg said he didn't think it currently was. He didn't know exactly what their long term plans were.

Councilman Haverfield said then we would be looking at elevating ourselves from the competitive standpoint if we were to go down that path. (Yes.)

Mayor Henry said that we could actually have a Class A standard at either location. Right? What we are talking about with this as far as an economic advantage with Class A is sometime after 2030.

Councilman Raymond asked in regard to Irrigation Districts, what are their feelings about Class A discharge?

Matt Gregg said the City has not approached any Irrigation District. Generally, in the past, they do not necessarily look favorably upon discharging into their canals. The City of Boise has looked at an alternative that includes that. They are currently looking through that. I think Irrigation Districts are seeing some writing on the wall that there are some things that need to happen here in the future.

Mayor Henry said he believed that Caldwell had some discussions with one of the Irrigation Districts relative to water going into their system.

This is a question for Council. The answer to this question determines how we go on to the next question.

Councilmember White asked so we consider economic development benefits as part of this by 2030? (15 years.) That goes fast.

Councilmember Skaug said he liked how Councilmember Raymond prioritized the three. That's a good way to look at this. So economic impact, yes. It is so hard to predict down the road what the future is. It is too unpredictable right now.

Mayor Henry said he was kind of hearing that it is not the primary driver. Right?

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Councilmember Skaug responded, not for this.

Mayor Henry said this is a hard one to come up with.

Michael Fuss said that it somewhat reflects the sentiment of the last couple of elections. Since this ongoing investigation has occurred during that time, the initial 2011 Strategic Plan was about the total economic benefit to community. What is that? That's why it was driven in the 2012 evaluation. But as time has gone by, the big concern appears to be the tax rate. What is the tax rate of the City of Nampa? So when we looked at that, what would this project do to affect that tax rate. That is where the second evaluation came in. Is City tax revenue more important than total economic impact to the community? Is one more important than the other? Are they the same? If they are the same, then total economic impact is a much bigger number. The reality is, what swings the decision?

Matt Gregg said that anything that produces Class A has a big benefit.

Councilman Raymond said maybe we can get some discussion started. The taxes and the economics of it are synonymous. If you have less taxes, you are going to have a better economy. It seems like there are sideboards on both alternatives.

Michael Fuss said if we were to pick the cost and subtract the benefits, what is the net cost for the total economic impact? The answer is fairly easy. Pick #3, Treat and Irrigation at \$97,572,000. It is kind of close because Infiltration (Year-Round) is roughly \$3,000,000 more. You could also look at #4B, Treat and Discharge Class A which would be the next step.

What is the easiest alternative? It shifts a little bit.

Matt Gregg said you start to narrow the range on the alternatives. If you took it completely out, Treat and Discharge is preferred. So if we take economic development completely out and say we aren't going to consider that in this decision, #4A

**BCE Results – Total Economic Impact**

Alternative	Total Cost of Asset Ownership*
Alt #1A – Infiltration (Seasonal)	(\$120,102,000)
Alt #1B – Infiltration (Year-Round)	(\$102,786,000)
Alt #3A – Treat and Offset	(\$217,264,000)
Alt #3B – Treat and Trade	(\$202,968,000)
Alt #3C – Treat and Irrigation	(\$97,572,000)
Alt #4A – Treat and Discharge	(\$199,129,000)
Alt #4B – Treat and Discharge Class A	(\$113,082,000)
Alt #5 – Do Nothing More	(\$257,731,000)

*\*Assumes 2% probability for economic development benefit*

Mayor Henry asked, isn't this a little bit "pie in the sky"? We can have economic incentives regardless if we Treat and Discharge or Infiltration. It all originates at the treatment plant. So if we have a business that comes in here and wants the water, we can still divert some of the water regardless of the way we go, right?

Matt Gregg said as long as we are creating that Class A product, yes.

Mayor Henry said 50% probability with Infiltration and there may be a probability in the future of it if we discharge, right? So if we assume at some point we are going to have to go to Class A, don't we at some point have to say, what are our short term costs? Piping up thirteen miles is in the short term and is quite a bit more expensive than dumping it into Indian Creek, correct? (Yes.) And we are going to get there pretty soon, right? Those numbers? I am looking at Infiltration year round at \$134,000,000. Treat and Discharge is at \$92,000,000. So short term, we are \$44,000,000 more if we decide to take it up to dry lake, short term?

Michael Fuss said short term is \$44,000,000 to go Infiltration to gain the whole economic benefit over the life of tax benefit of \$5,000,000. So we spend fifty to benefit five. If tax revenue is the number. Otherwise you spend \$50,000,000. The perspective is different. Who benefits? How much do you weigh that?

Mayor Henry said regardless of the way we go, there is economic benefit, correct? (Provided you go with Class A.) The assumption that economic benefit is about the same regardless if we discharge Class A or Infiltrate Class A. So then again, you have to go back to what your upfront cost. I am struggling getting past the \$44,000,000 in the next five to ten years. That is a "hard pill".

Sensitivity Analysis

Sensitivity Tested	Resulting BCE Output
High Capital Cost (+50%)	Alt #3C – Treat & Irrigation Reuse
Low Capital Cost (-30%)	Alt #1B – Infiltration (Year-Round)
Economic Development Benefit Removed	Alt #4A – Treat and Discharge
Economic Development Benefit Doubled	Alt #3C – Treat & Irrigation Reuse
Delayed Infiltration Pipeline w/ 5-yr Trading Program	Alt #3C – Treat & Irrigation Reuse

1. Infiltration alternatives are sensitive to capital cost variations
2. Economic development impacts are a key criteria in the current analysis
3. Phasing the implementation of infiltration alternatives limits the amount of debt required to fund capital costs

Matt Gregg said that one of the things that we did obviously you put a number in, there is a range on that number. Let’s test what it is sensitive to. If it is highly sensitive to a number, we need to go investigate it more. If it is not sensitive, unintelligible.

Mayor Henry asked what he meant by “sensitive”.

Matt Gregg said that by changing one input, are we going to change the decision? As we look at this decision, there is a longevity piece and a durability piece to it. If we assume an interest rate of 3% vs. 3.5%, that drastically swings our numbers. How positive are we that 3 or 3.5 percent is correct? What we did look at was capital costs. If capital costs go up, Treat and Irrigation is a more favorable alternative but it does have some outstanding questions that we will get to.

If capital costs go down, Infiltration is heavily influenced by them so that becomes a more viable alternative. You remove economic development, just discharge into the creek, you double it. Treat and Irrigation becomes more favorable. Pipe line is an issue for Infiltration. Everyone is aware of that.

Based on the risks and benefits we have looked at, plus the capital and O&M costs, there are four alternatives that really kind of rise to the surface. One is Direct Infiltration. That is heavily influenced by how we look at economic development. Treat and Irrigation Discharge, Treat and Discharge to Indian Creek and then Treat and Discharge Class A to Indian Creek.

There are a couple of things to keep in mind too. There are a couple of external inputs that are still undefined. DEQ is working on a lower Boise River treating framework. We are also in the preliminary stages of Indian Creek temperature TMDL. In the past, we challenged how DEQ listed

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Indian Creek for temperature. The result was TMDL process that was done for phosphorus, we are going to go do another one on temperature on Indian Creek.

One thing to keep in mind, there are fatal flaws that still exist for these alternatives. Two of the primary ones, direct infiltration, A & B, will study property by support infiltration. The work we have done today and what has potentially been proposed in the future is really targeted. Can it support that? One of the water rights associated with infiltration, it's been a question that came up between from IBWR. We talked about it in the past. Treat and irrigation discharge, we haven't talked to irrigation companies yet so there is a potential fatal flaw there. There are others that exist. The need for TBS removal is a big question. If you look back, it's a \$25million cost if infiltration takes on the risk side. Treat and Off-Set, can we even get land availability? There's nothing built between the treatment plant and Caldwell Indian Creek. Treat and Trade, all the trade framework, there's a lot of unknowns there, and on irrigation we talked about that. And then what is the industrial demand for Class A water? DEQ tells us at some point we have to do a facility planning document and that looks at both regulatory compliance and also anything that is required for growth or rehab replacement at the treatment plant. We've looked at regulatory requirements since 2009. You would think we could make a decision by 2018 that allows enough time to meet all the NPDES time frames. There are other things that impact the treatment plant. The city continues to grow, consuming more capacity, new industries come to town and consume more capacity. So we need to account for that and plan for the future. Repair and replacement assets become important. A lot of the treatment plant was built in the early 1960's so as you look at a useful life of concrete at 50 years. That means we are coming up on a lot of these asset replacement projects. Some of those very old treatment plans need to be replaced. One of the things we will be looking at in the near future is how do we pull all this together, make a cohesive plan and move forward? That process is set to kick off here this summer and extend into early 2018 time frame. We focused a lot on the regulatory piece having not necessarily looked at the growth and repair and replacement recently. So go through that. Look at flows and lows. Get into a rate study and ultimately move forward to phase two in 2025 for the final phosphorus compliance. The question here is; how do we proceed with alternative investigation? We have eight alternatives out there. We can continue to investigate all of them, pick one today, or somewhere between that.

Councilmember White said she thought they could reduce the list because "do nothing" is not an option.

Matt Gregg said we keep it on there just in case it comes up. Respectfully, we might keep it on the list but honestly it's just updating a date.

Councilmember White said on the list of alternatives, you mention fatal flaws. Did you tell us on those alternatives where you found fatal flaws?

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Matt Gregg said any alternative that is up there hasn't had a fatal flaw that has been confirmed. We took Rapid Infiltration off the table because we assumed it had a fatal flaw at a lower quality of recycled water. There are some that are still out there that exist today. So for infiltration, if studied properly, five (Do Nothing) is not viable. That is a fatal flaw.

Councilmember Bruner said you can get rid of alternatives by determining whether you want Class A water or not. There are only certain alternatives that provide Class A water. I only see a couple of alternatives. That is the first question, do we want Class A water or not?

Councilman Raymond said if we take out the irrigation because there is a such a prominence for a fatal flaw there, for Treat and Irrigation.

Mayor Henry said we are basically down to Infiltration or Treat and Discharge. That's where I thought we had been all along. So the question is, do we keep going down those two paths recognizing that the direct infiltration is looking at \$44 million capital costs more to do. How much do you want to bet as we get closer that number grows?

Councilman Bruner said what I was looking at on page 28 was more like, I realize it's an increase, but more like 24 million. If you are trying to get to Class A, if you are going to do 4b. If my subtraction is correct, I thought it was about 24 million, compared to seasonal infiltration.

Councilman Skaug said and that is within the next 10 – 15 years. Direct Infiltration, I was excited about this the last couple of years until today. Now it looks like Treat and Discharge, Class A and Reuse is the way to go. I am a little surprised.

Mayor Henry said that the thing about Class A is, what we are saying is that if we do Direct Infiltration, DEQ may require Class A. There is a 50% probability by 2025.

Matt Gregg said that Class A is required for Direct Infiltration. The big risk for Class A is total dissolved solids removal. That's the 50%. That cost has been captured in the BCE.

Mayor Henry said that Treat and Discharge Class A is not required right now, correct? So we can have nicer quality of water that we're taking up to dry lake but it is not required if we do Treat and Discharge at Indian Creek. We are going to be spending a lot of money up at dry lake. And we have a payment due in a year.

Michael Fuss said the reason we have Brown & Caldwell on hold on Infiltration is, the next step of in Infiltration Investigation is about \$1 million. That's what the next cost is. Then the cost of the purchase is about \$3.2 million to buy the land in the next two years. If we are going to make those decisions, that is fine, and we want to keep them on the table, that's fine. But it's time to make that decision.

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Councilman Raymond said that in regard to Infiltration vs. Discharge, what is the risk between those two the way you see it? If we go Discharge, the only risk we have is the removal of the dissolved solids. If we Discharge, we have all kinds of problems that could come up. Is that correct?

Matt Gregg said that if we continue to discharge into Indian Creek, we remain under the NPDES which has the laundry list of things that could cause potential risks in the future that need to be removed. Phosphorus wasn't regulated 20 years ago and we are seeing a limit of .1 today. That same change will likely occur on some other constituent. That's the thing with Indian Creek and the 4a alternative. Going infiltration, there's a near term risk based on the reuse permitting of removing TDS. But longer term, the risks of the long term regulatory is minimized. The nice part of Infiltration is that you can see rate stability in the long term once you over this huge capital.

Councilmember Haverfield asked the Mayor if he had asked if the Treat & Discharge approach without the Class A development initially could be added if a private entity wanted to come in and help us capture that Class A water for their use? Or is that a viable approach?

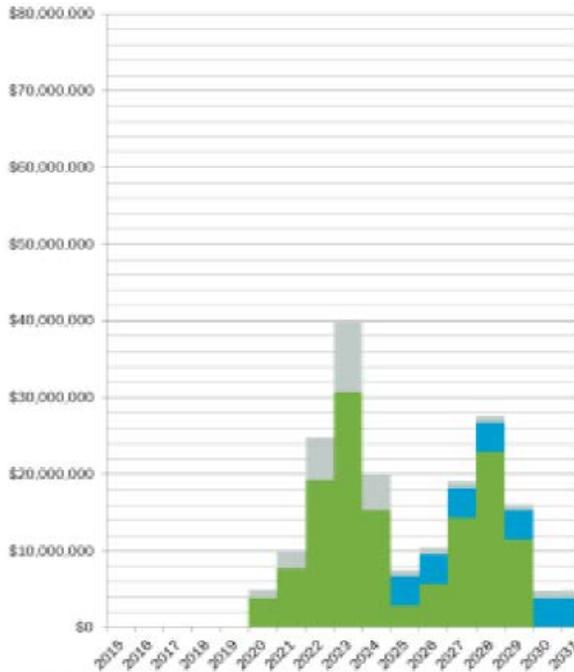
Michael Fuss said that is correct. All alternatives meet the NPDES permit. Adding Class A in the Treat & Discharge option, allows you to gain those economic benefits.

Councilman Haverfield said you said that Meridian is looking at Class A development of water but they are not an industrial type of growth pattern. They are more residential. So if we were to approach it with a Treat & Discharge but have a Class A potential if a private entity wanted to come in and help us develop it. Or if we want to develop that and then reach out to try and encourage that.

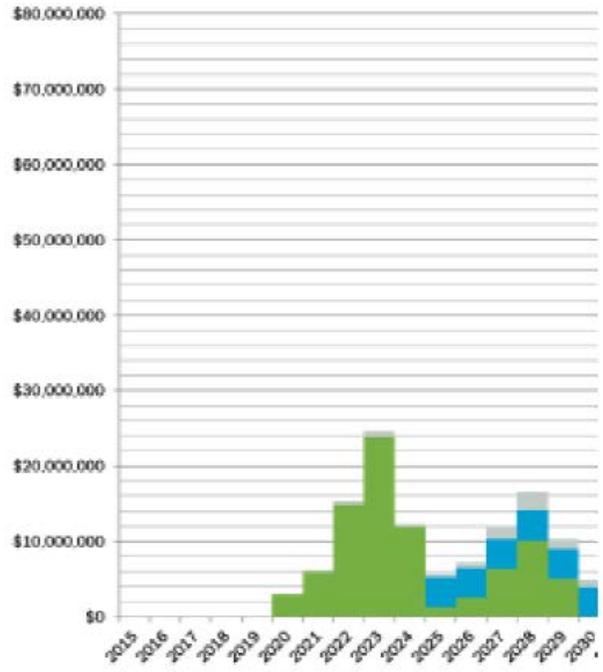
Councilman Bruner asked what is the window of time to accomplish something like that? If you do have any entity that does want to come in, how long does it take to do something like that incentive wise?

Matt Gregg said if we did 4a, how long would it be until we got to 4b? Construction can move as fast or slow as you want. The difference between those is pretty minimal between the two.

**Delaying Infiltration Pipeline w/Short-term Trading Program**



Alt 1B - Direct Infiltration (Year Round)



Alt 4A - Treat and Discharge

**BCE Summary**

Four options consistently have lowest total cost of asset ownership

- Alt #1B – Direct Infiltration (Year-round)
- Alt #3C – Treat and Irrigation Discharge
- Alt #4A – Treat and Discharge
- Alt #4B – Treat and Discharge Class A Reuse

Some key external inputs for are still undefined

- Lower Boise River Trading Framework
- Indian Creek Temperature TMDL

Potential fatal flaws still exist with several alternatives

- Alt #1A & 1B – Direct Infiltration

- Viability of Study Property #5 to support infiltration (Alt #1B)
- Water rights associated with discharge to infiltration
  
- Alt #3C
  - Ability to reach agreement with irrigation company to discharge to canal

**Outstanding Questions**

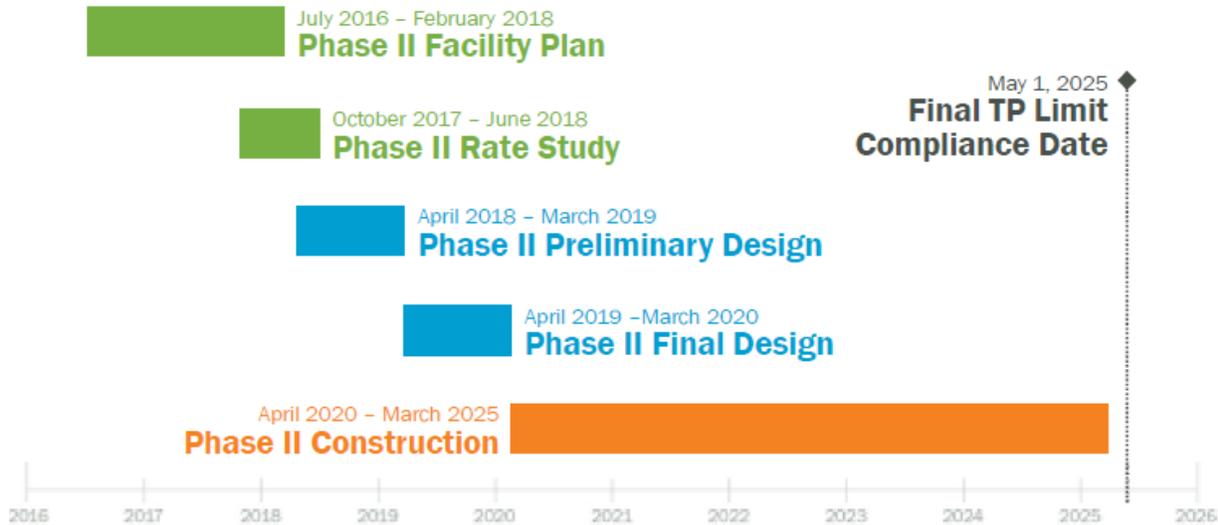
Alternative	Outstanding Questions
Alt #1A – Infiltration (Seasonal)	<ul style="list-style-type: none"> <li>• Viability of Study Property #5</li> <li>• Water rights</li> <li>• Need for TDS Removal</li> </ul>
Alt #1B – Infiltration (Year-Round)	<ul style="list-style-type: none"> <li>• Viability of Study Property #5</li> <li>• Water rights</li> <li>• Need for TDS Removal</li> </ul>
Alt #3A – Treat and Offset	<ul style="list-style-type: none"> <li>• Availability of property on Indian Creek</li> <li>• Impacts of Trading Framework</li> </ul>
Alt #3B – Treat and Trade	<ul style="list-style-type: none"> <li>• Impacts of Trading Framework</li> <li>• Availability of potential trading partners</li> </ul>
Alt #3C – Treat and Irrigation	<ul style="list-style-type: none"> <li>• Agreement with irrigation district on discharge to irrigation canal</li> <li>• Waters of the US determination</li> </ul>
Alt #4A – Treat and Discharge	
Alt #4B – Treat and Discharge Class A	<ul style="list-style-type: none"> <li>• Industrial demand for Class A water</li> </ul>
Alt #5 – Do Nothing More	

Next Step

Wastewater Facility Plan

- Regulatory Compliance
  - WPMT has worked since 2009 to identify long-term approach for Nampa WWTP to address phosphorus and temperature compliance-
  - Decision on selected approach is needed by 2018 to allow time for funding, design, and construction
- Capacity and System Reinvestment
  - Additional treatment capacity may be required to address growth
  - Repair or replacement of existing facilities may also be required based on asset lifecycle
- All projects at Nampa WWTP must be planned and executed to support City’s goals and available funding

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Decision // How should Staff and the WPMT proceed with alternative investigations?

1. Continue the consideration of all alternatives and defer decision to facility planning.
2. Reduce the list of alternatives and proceed with investigation/option refinement.

Mayor Henry said the question is, do we want to continue to pursuing dry lake? Do we want to look at Treat & Discharge? We are going to be spending an extra million dollars on dry lake pretty soon.

**MOVED** by Bruner and **SECONDED** by Haverfield to Proceed with Treat & Discharge, 4a with the option to add Class A Reuse potential which would “kick” us into the 4b. The Mayor asked for a roll call vote with all Councilmember present voting **YES**. The Mayor declared the **MOTION CARRIED**

The mayor adjourned the meeting at 5:05 p.m.

Passed this 17<sup>th</sup> day of October, 2016.

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MAYOR

ATTEST:

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CITY CLERK