Dear Rick:

We have now processed all of the pre-application for Peregrine through County staff with the exception of the verification of our source of potable water for the 72 residential lots. As you know, Nick Purdy and Charles Brockway (Brockway Engineering) met with Attorney Ned Williamson and outlined a joint agreement where Peregrine would furnish a well site and a plan to recharge Peregrine's entitled water into the aquifer, providing considerable more water to the City of Hailey than the pre-agreed amount the City would furnish the 72 Peregrine lots. The City would receive the foregoing net benefit, and Peregrine in turn, would have a city water system as opposed to installing pressure pumps and a private water system. Additionally, Peregrine would contribute $500,000 to the Hailey water system. That amount is slightly more than the cost of the Golden Eagle (71 lot/2-10 acre) private water system when installed eight years ago and has functioned without problems to this date.

Pursuant to my request, Brockway Engineering submitted a report this week covering the details and benefits to Hailey of the proposed aquifer recharge and ground water mitigation using the Peregrine entitled water to add to the City's entitled water rights. By a copy of this letter, I am requesting that Brockway furnish each of you the above referenced report and findings.

Upon receipt of the Brockway report, it is requested that your Council appoint a committee of one or more Council Members to meet with Attorneys Williamson, Brian Ballard, Chuck Brockway, and Nick Purdy, at which time Brockway can respond to any question your committee may have. If at that time your committee is favorable to the proposed terms and benefits to the City of Hailey, the details of a formalized agreement can be agreed to and after approval by Attorney Williamson, submitted to your Council for final approval.

Mindful that a decision needs to be made shortly for the Peregrine domestic water system, I would appreciate your Council's appointment of a committee at an early date as above requested.

Sincerely,

Harry S. Rinker

Dear Rick and City Council Members:

I understand your Council and the others copied in this letter have now received the subject Feasibility Study prepared by Brockway Engineering. Chuck, Jr. whom prepared this study has my compliments on the excellence of the findings and identifying all details, including any negatives to be addressed. I trust those reading this study will be as favorably impressed as me.

It is requested that your Council schedule a Public Hearing to consider this recharge proposal, and if favorable, to appoint one or more Council Members to form a committee to meet with all appropriate parties, including City Attorney Williamson, City Engineer Hellen, Dr. Brockway, and Peregrine Ranch representatives for the purpose of developing a Water Recharge Plan that will benefit all parties.

An extensive and detailed study such as this is normally paid by all three beneficial parties, however, as a civic contribution of goodwill, I will fund the entire cost. City Engineer Tom Hellen was inadvertently left off the distribution list, and a copy is being forwarded to him by FedEx, which should arrive on or before Thursday, June 5th.

Harry S. Rinker

BROCKWAY
ENGINEERING
P.L.L.C.

Hydraulics
Hydrology
Water Resources

RECEIVED
MAY 29 2008

May 27, 2008

Mr. Harry Rinker
Rinker Company
P.O. Box 7250
Newport Beach, CA 92658

Re: Peregrine Ranch Recharge Feasibility Study
Project No. 128-35-2008

Dear Harry:

Enclosed you will find two copies of the feasibility investigation into the potential recharge and aquifer mitigation project on the Peregrine Ranch. I have also sent copies to the Hailey City Council members and the Blaine County School District c/o Jim Speck.

Cordially,

Charles G. Brockway, P.E.

Cc: Nick Purdy (1 copy)
Brian Ballard (1 copy)
Hailey City Council (5 copies)
Blaine County School Distirct c/o Jim Speck (1 copy)
Ned Williamson, City Attorney
Rob Williams

CHARLES E. BROCKWAY, PH.D., P.E.

CHARLES G. BROCKWAY, PH.D., P.E.

2016 NORTH WASHINGTON STREET • SUITE 4

TWIN FALLS, IDAHO 83301

208•736•8543

FAX: 736•8506

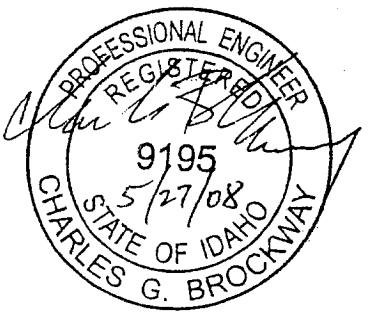
Project No. 128-35-2008

Feasibility Investigation for an Aquifer Recharge and Mitigation Project on the Peregrine Ranch Development

Prepared for:

Harry Rinker

May 27, 2008



For information concerning this report, contact
Charles G. Brockway, Ph.D., P.E.

BROCKWAY ENGINEERING PLLC

CHARLES E. BROCKWAY, PH.D., P.E.
CHARLES G. BROCKWAY, PH.D., P.E.

2016 NORTH WASHINGTON, SUITE 4
TWIN FALLS, IDAHO 83301

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Executive Summary

In the Big Wood River drainage, the State of Idaho administers groundwater and surface water separately, neglecting the hydrologic interconnection between the two resources. This will change, however, when the State implements conjunctive management in the basin within the next five years, and groundwater users of all types will likely be required to curtail or mitigate for their depletion.

The proposed Peregrine Ranch Recharge Project is one means by which groundwater depletion may be mitigated by replenishing the aquifer with surface water from the Big Wood River. The project would consist of an infiltration facility located on the proposed Peregrine Ranch development north of Hailey, supplied with surface water via an existing diversion from the Hiawatha Canal. Three potential participants in the project were evaluated: the Peregrine Ranch, the City of Hailey, and the Blaine County School District. The recharge project appears to be feasible from both engineering and regulatory standpoints. Additional preliminary design and discussions with both the Idaho Department of Water Resources and Idaho Department of Environmental Quality are warranted. Potential benefits to the three potential participants include the following:

Peregrine Ranch

- Surface water appurtenant to 27.6 acres removed from irrigation due to the residential development would be recharged.
- Depending on the available surface water supply, the recharge would partially or fully mitigate for depletion from groundwater pumping after the surface rights are cut off.

- Assuming the groundwater rights are subject to full curtailment, recharge would allow the groundwater to continue to be used and the irrigation season extended to September 30 in 69% of the years, compared to 24% of the years without recharge.
- The surface rights would be protected from forfeiture while used in a mitigation program.
- The recharge pond would provide an aesthetic and wildlife habitat benefit when operating.

City of Hailey

- The City's existing municipal surface water right can be used in a recharge project to provide mitigation for a portion of irrigation usage within the City.
- The extent of mitigation will depend on determination of historic consumptive use by IDWR. It appears the surface right will mitigate for at least 15 acres of irrigation, or 33 acre-feet (10.75 million gallons) of consumptive use in 71% of the years.
- Mitigation value may be greater if IDWR considers the surface right to be worth more due to its municipal nature.
- Using the surface right for mitigation would avoid the need for developing separate infrastructure to utilize the surface water directly.

Blaine County School District

- The District's surface water right is a 13-acre right which is currently not being used, but is valid and available for use in a recharge mitigation project.

- The right can be used to mitigate 13.0 of the District's 15.6 acres of unmitigated irrigation from groundwater.
- If the District's objection to the SRBA recommendation is successful, the surface right could be used to mitigate 15.0 acres, or nearly all of the unmitigated groundwater irrigation.
- Using the surface right for mitigation would avoid the need for developing separate infrastructure to utilize the surface water directly.
- Using the surface right for mitigation would protect the right from forfeiture.

Feasibility Investigation for an Aquifer Recharge and Mitigation Project on the Peregrine Ranch Development

Brockway Engineering, PLLC
Charles G. Brockway, P.E.

May 27, 2008

A. Overview and Purpose

The Peregrine Ranch is a proposed residential development located 1.5 miles north of Hailey, Idaho (see Figure 1). The site encompasses approximately 160 acres of land which is currently utilized for agricultural purposes, chiefly pasture and alfalfa hay cropping. Water rights appurtenant to the property include surface rights from the Big Wood River, delivered via the Hiawatha Canal, and two groundwater rights appurtenant to a single well located near the center of the property. The surface rights provide full coverage of the land and are overlapping with the groundwater; therefore the Idaho Department of Water Resources (IDWR) considers the groundwater rights to be supplemental to the surface rights, to be used only when the surface rights are inactive due to a priority cut or are inadequate to supply the irrigation demand. With the present water right structure, the land can receive a full water supply every year from a combination of surface water and groundwater.

The surface rights have relatively late priority dates and are subject to cutoff nearly every year. Groundwater rights in the valley are currently administered separately from surface rights and are not subject to priority cuts. However, IDWR has determined that water rights in the Big Wood River valley will be conjunctively administered once the rights have been decreed in the Snake River Basin Adjudication. This means that both surface water and groundwater rights will be managed as a single resource, likely

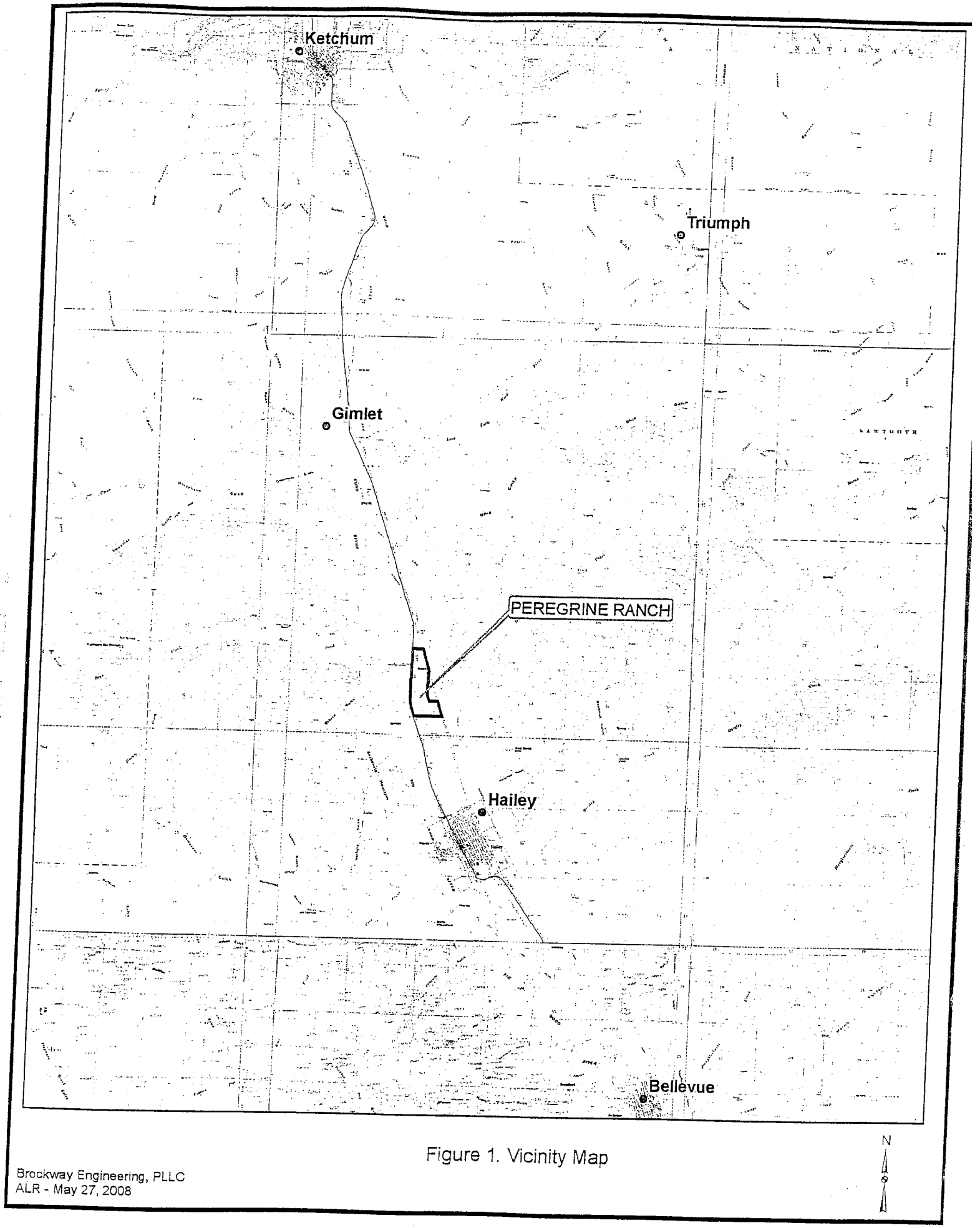


Figure 1. Vicinity Map

Brockway Engineering, PLLC
ALR - May 27, 2008

resulting in priority cuts of groundwater rights to some unknown degree, or a requirement to mitigate for depletion, or both. Consumptive uses of groundwater, such as agricultural irrigation, irrigation within residential subdivisions, and irrigation within municipalities, will likely be subject to curtailment under conjunctive management.

As agricultural land, the Peregrine Ranch could tolerate some curtailment of the groundwater rights. As a residential development, however, it is imperative that a reliable supply be provided in as many years as possible. With this objective in view, the feasibility of mitigating for all or part of the late-season groundwater pumping using aquifer storage and retrieval is being investigated. Conceptually, this plan will involve recharging a portion of the existing consumptive surface rights which will be available due to a reduction in irrigated area on the Peregrine Ranch, in return for protection of the groundwater rights against priority calls and potential curtailment.

Since other entities using groundwater for consumptive purposes may also be in jeopardy of curtailment, this feasibility study also evaluated two potential participants in the plan: The City of Hailey and the Blaine County School District. Both entities heavily use groundwater for irrigation, and possess surface rights which may be candidates for use in a recharge project. Both the Hailey City Council and the attorney for the Blaine County School District have indicated a general interest in evaluating the feasibility of participating in the plan.

The feasibility study involved the following components:

1. Determination of administrative procedures and potential restrictions, per current IDWR policy.

2. Determination of extent of existing groundwater usage and need for mitigation.
3. Evaluation of water right coverage and surface water rights potentially available for recharge.
4. Evaluation of physical and hydraulic aspects of a recharge facility on the Peregrine Ranch development.
5. Evaluation of the need for groundwater modeling.

B. Administrative Constraints

Any plan to mitigate groundwater pumping by recharge of surface water rights will require approval by the Idaho Department of Water Resources. Few plans of this sort have been approved by the State, and there are few written policies or rules in place that could guide both the applicant and the State. A teleconference was held with David Tuthill, the Director of IDWR; Jeff Peppersack, Water Rights Section Supervisor; and Allen Merritt, IDWR Southern Region Manager, to discuss this proposed recharge plan and identify any hydrologic and administrative issues that are known at this time.

- Conjunctive management will be implemented in the Big Wood basin after the adjudication of water rights is substantially complete. This will likely occur no earlier than 2011.
- As a general rule, any mitigation for groundwater pumping must mitigate in terms of timing, location, and quantity in order to alleviate concerns regarding potential enlargement of the water use and injury to other surface water rights and groundwater rights.

- The effect of aquifer recharge must be analyzed to determine the extent and movement of the "mound" created by the recharge, and the effect of pumping the groundwater wells. There is no fixed criteria for evaluating this type of proposal. The burden is on the applicant to adequately demonstrate to IDWR that other water rights are being protected and that the water usage is not being enlarged.
- A transient groundwater model will be required to show the net effect of the recharge project and to address all concerns of IDWR.
- The recharge and withdrawal points must generally be in relatively close proximity. However, each case is different and the groundwater model must be used to evaluate the net effect.
- The primary concern is the potential effect on the Big Wood River. The quantity available for senior rightholders must not be reduced. The timing and location of river impact within a season must also be evaluated with respect to locations of diversions to ascertain whether injury might occur even though the total seasonal water use is not enlarged.
- Impacts on groundwater levels are covered by the statutory "reasonable pumping level" provision. Groundwater users are not guaranteed any particular water level, but are only entitled to a "reasonable" pumping level. The impact of the recharge project would not need to guarantee zero impact anywhere in the aquifer.
- Early (<1949) wells may not be covered by "reasonable pumping level" i.e. the Groundwater Act.
- The "credit" received that could be applied toward mitigation of groundwater pumping would be equal to the historical consumptive use of the surface water right which is being recharged and not the historical diversion volume.

- In order to allow the recharge project, a transfer of the surface right would be required to convert a portion of the right from irrigation (or other consumptive use) to recharge for mitigation. The transfer must be accompanied by a mitigation plan addressing all pertinent hydrologic issues.
- In a curtailment scenario, domestic in-house water usage will almost certainly be exempt, whether it occurs from an individual well or with a municipality. However, large-tract irrigation within a municipality and likely even the "domestic" irrigation of 0.5 acres per residence under I.C. 42-111, will not be exempt from curtailment.

C. Peregrine Ranch

C.1. Water right coverage

Currently, the total irrigation on the Peregrine Ranch is 160 acres, which covers essentially all of the irrigable land. This irrigation is occurring under the water rights as described in Table 1 as recommended in the SRBA. The rights are structured in two groups: the main group on the 130-acre southern parcel, and the north group on the parcel locally known as the KSKI property after the former radio station situated there. The current water right coverage is depicted on Figure 2.

Figure 2. Water right coverage on Peregrine Ranch

Brockway Engineering
April 25, 2008

Table 1. Water rights currently appurtenant to the Peregrine Ranch.

Number	Priority	CFS	Acres	Remarks
Main Area				
37-20431	6/1/1886	2.92	130.4	Surface water
37-20429	5/4/1889	2.55	130.4	Surface water
37-20427	5/21/1890	2.20	130.4	Surface water
37-21268	9/16/1960	1.17	58.4	Groundwater
37-2507A (part)	1/5/1950	1.44	72.0	Groundwater
		Total ac.	132.4	
North Area				
37-522D	5/4/1889	0.30	18.8	Surface water
37-523C	5/21/1890	1.20	18.8	Surface water
37-20751	3/24/1883	0.13	8.8	Surface water
37-919	4/1/1940	0.545	16.0	Surface water (saved, indep. of priority)
		Total acres	27.6	
		Total acres all rights	160.0	

Under an agreement with the Valley Club golf course, 100 acres will be transferred to Valley Club for expansion of the existing golf course, leaving 60 acres as the gross area of the Peregrine Ranch development. At this time, it is understood that the Valley Club's land, irrigation, and water rights will be completely separate from Peregrine Ranch and will not be involved in a recharge plan which may be developed on the Peregrine Ranch. The division between Valley Club and Peregrine is shown on Figure 3.

Within the 60-acre residential development, a considerable portion will be removed from irrigation due to construction of roads, homes, support buildings, and hardscape. Based on the current subdivision plan, 27.6 acres will be removed from irrigation and 32.4 acres will remain irrigated. These numbers will likely change as the subdivision moves through the county approval process, but are sufficiently accurate for planning purposes.

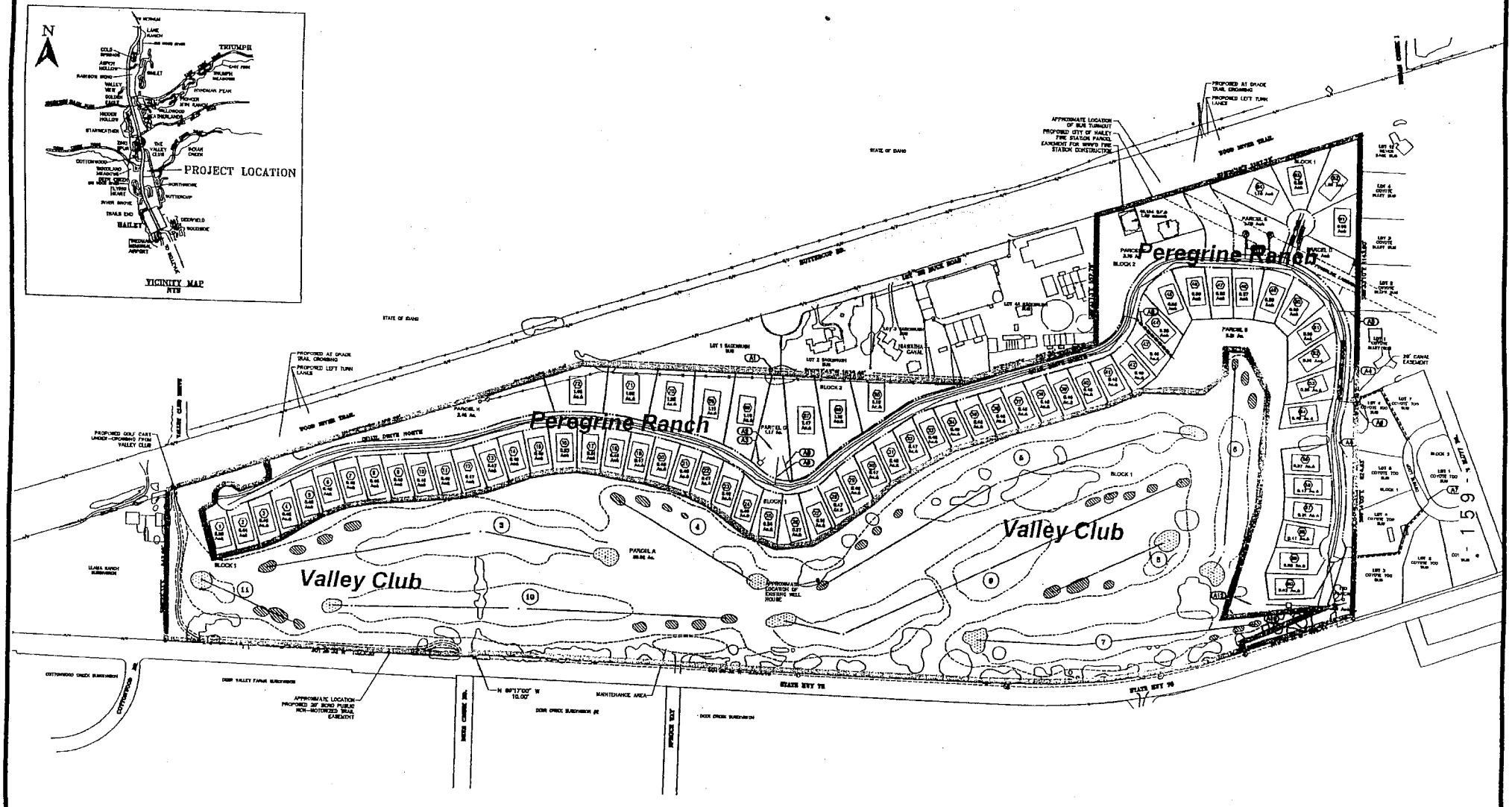


Figure 3. Preliminary plat showing division between Peregrine Ranch and Valley Club golf course.

Brockway Engineering
May 5, 2008

C.2. Estimated irrigation demand and groundwater usage

Irrigation water demand for the 32.4 irrigated acres was estimated using crop evapotranspiration (ET) values from Allen & Robison (2007). This publication has been adopted by IDWR for use in consumptive use evaluation and other water demand calculations. For the purposes of this study, actual ET values were used rather than precipitation deficit values in order to evaluate a year with minimal precipitation. For a crop of turf grass, the total consumptive use (ET) from April 15 through October 31 is 28.0 inches (2.33 ac-ft/ac) at the Hailey station, or 75.5 acre-feet on the 32.4 acres. Applying an irrigation efficiency of 75%, the annual diversion requirement is 100.7 acre-feet and the monthly distribution is shown on Figure 4.

As noted above, this water requirement is supplied both by surface water and groundwater. The proportion supplied by surface water varies each year depending on the cutoff date of the water rights. The priority dates of the water rights vary, but for planning purposes a conservative historical cutoff date of the 6/1/1886 right (the best right on the main parcel) was assumed. Cutoff dates were obtained from the published annual reports of the watermaster of District 37 from 1948 through 2006. Cutoff date statistics are shown in Table 2.

Table 2. Cutoff date statistics for the 6/1/1886 right on the Big Wood River.

	Cutoff Date	% of Demand Supplied by Surface Water / Groundwater
Average	August 19	74.5% / 25.5%
Median	August 9	67.5% / 32.5%
Earliest	April15 (i.e. right never on)	0% / 100%
Latest	October 31 (i.e. full season)	100% / 0%
20% exceedance	July 11	45.0% / 55.0%

Figure 4 illustrates the typical division between surface and groundwater supply for the median year, with a cutoff date of August 9.

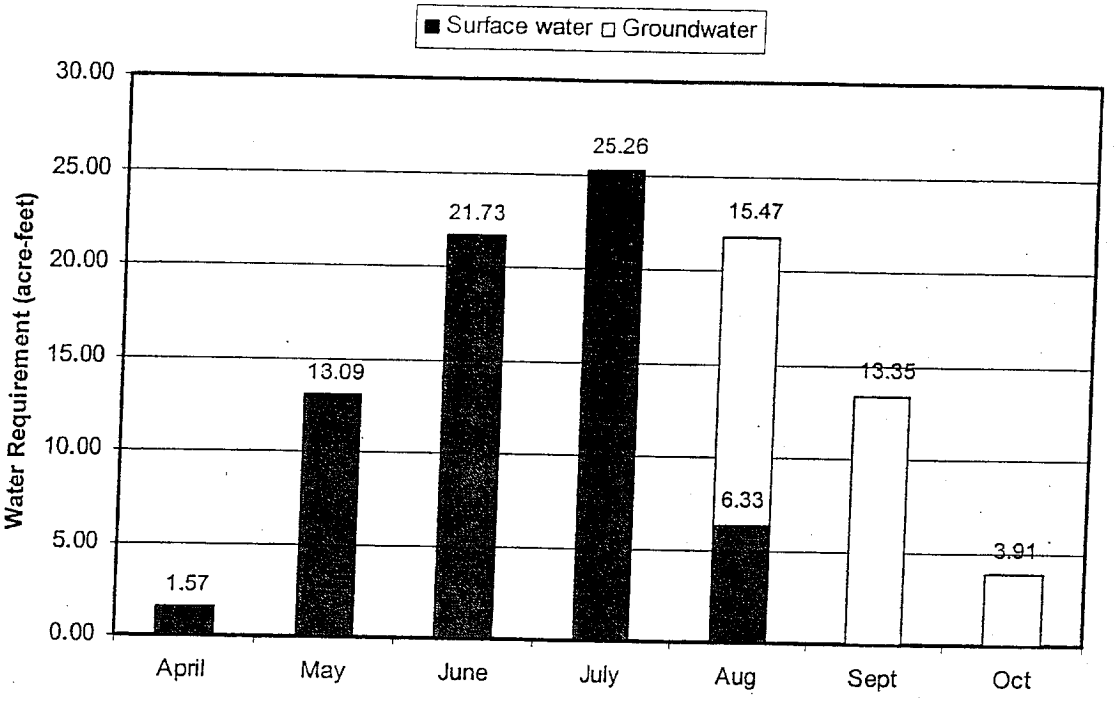


Figure 4. Monthly water diversion requirement for 32.4 irrigated acres on Peregrine Ranch. The surface water cutoff date is shown for the median year.

C.3. Mitigation need and surface water availability

As this analysis shows, a significant portion of the water requirement for Peregrine Ranch must be supplied by groundwater. Based on current IDWR policy, only the consumptive use of the groundwater must be mitigated, because the application of water in excess of consumptive use is not used by the crop and returns to the aquifer. The volume of consumptive use from groundwater each year depends on the cutoff date of the surface right. Surface water available to recharge for mitigation of the groundwater

right (i.e. the mitigation "credit") is the volume of surface water that would have been consumed by the 27.6 acres being removed from irrigation within the development. The recharge credit therefore also depends on the cutoff date of the right, since an earlier cutoff date in a particular year means less surface water would have been consumptively used. The Director of IDWR has indicated that, due to the rapid response of aquifer-river interaction in the Big Wood system, there will likely be no opportunity to "bank" water in the aquifer from one year to the next. Therefore, IDWR will likely limit the amount of mitigation credit that can be used each year to the actual consumptive volume of surface water recharge in that particular year.

A recharge mitigation plan will only be feasible if a substantial benefit can be realized in terms of an increase in the reliability of the water supply. In order to predict the benefit of the recharge plan, the historic cutoff dates since 1948 were used to determine 1) the amount of mitigation credit available each year, and 2) the extension of the season after the surface rights are cut that the mitigation would allow. It is assumed that the 1948-2006 is reasonably representative of future conditions. For this analysis, the assumption is made that the groundwater rights are fully curtailed every year, so that 100% of the groundwater consumptive use must be mitigated with recharge. This is a conservative assumption that could likely be true in dry years. In wetter years, the groundwater rights may only be fractionally curtailed, but it is not possible at this time to know the details of the future conjunctive management of the basin.

For each year from 1948 through 2006, the recharge credit was calculated as the crop consumptive use (ET) for 27.6 acres from April 15 through the cutoff date of the surface water right. From this point forward in each year, groundwater is assumed to be

pumped until the consumptive use on 32.4 acres from the cutoff date forward equals the recharge credit. At this point, all water supply is assumed to be exhausted for the season. The results of this analysis are graphically illustrated in Figure 5

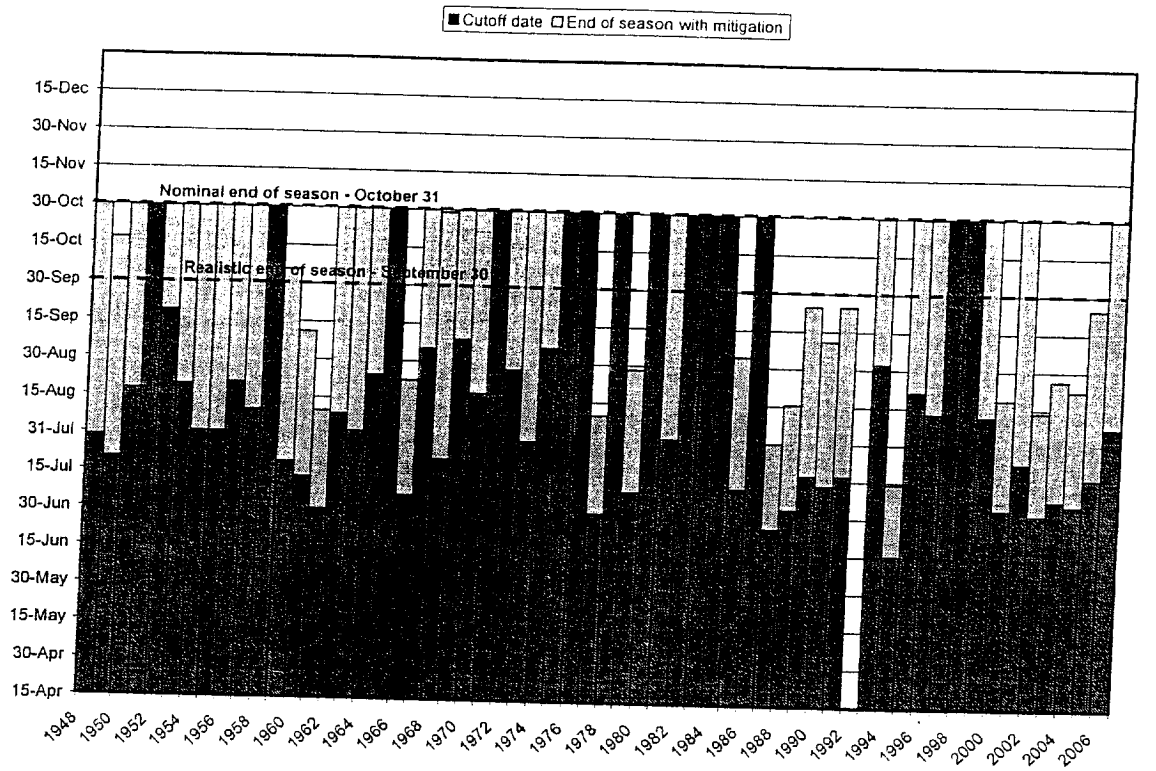


Figure 5. Historic cutoff dates and season extension achievable with recharge mitigation, assuming 100% of groundwater rights are curtailed.

Based on this analysis, the average length of season extension is 50 days, and the median is 55 days. The reliability of the water supply is reasonably high, lasting through the nominal end of season (October 31) in 64% of the years, and through September 30 in 69% of the years. In comparison, the surface rights alone last through September 30 in only 24% of the years. This indicates that the recharge project will have a significant average benefit over the long term.

In dry years, however, the mitigation program may have little benefit due to the early cutoff date of the surface rights. In the worst year of record, 1992, the surface rights were never on, and therefore no mitigation credit was available. In very wet years, the surface rights may be active the entire season (most recently in 1997 and 1998), and therefore the recharge will have no benefit in those years (assuming "banking" water to be used in the next year is not allowed).

D. City of Hailey Potential Participation

The City of Hailey is being evaluated as a potential participant in the recharge mitigation plan. The City utilizes its Indian Springs source as the primarily supply, but also pumps significant volumes of water from its wells to cover both in-house demand and irrigation demand during summer. Well usage is authorized by five (5) water rights, with priority dates ranging from 1964 to 2001, allowing a total of 12.06 cfs, as shown in Table 3.

Table 3. City of Hailey groundwater rights.

NO.	PRIORITY	CFS	USE	OBJECTION	REMARKS
37-2698	10-29-1964	2.56	Municipal	None	
37-2699	8-11-1964	2.00	Municipal	None	
37-7305	11-4-1973	2.62	Municipal	None	
37-20831	10-14-1977	0.21	Irrigation	None	9.1 acres
37-8337	9-10-2001	4.67	Municipal	N/A	No "large tract" irrigation
	TOTAL	12.06			

Part or all of the irrigation water usage may be subject to curtailment when conjunctive management is implemented. How IDWR may treat municipal water rights under a curtailment scenario is not fully clear. In the Director's orders pertaining to the Eastern Snake Plain Aquifer over the past three years, exemptions were generally made for the I.C. 42-111 domestic portion of municipal usage, including in-house water usage and up

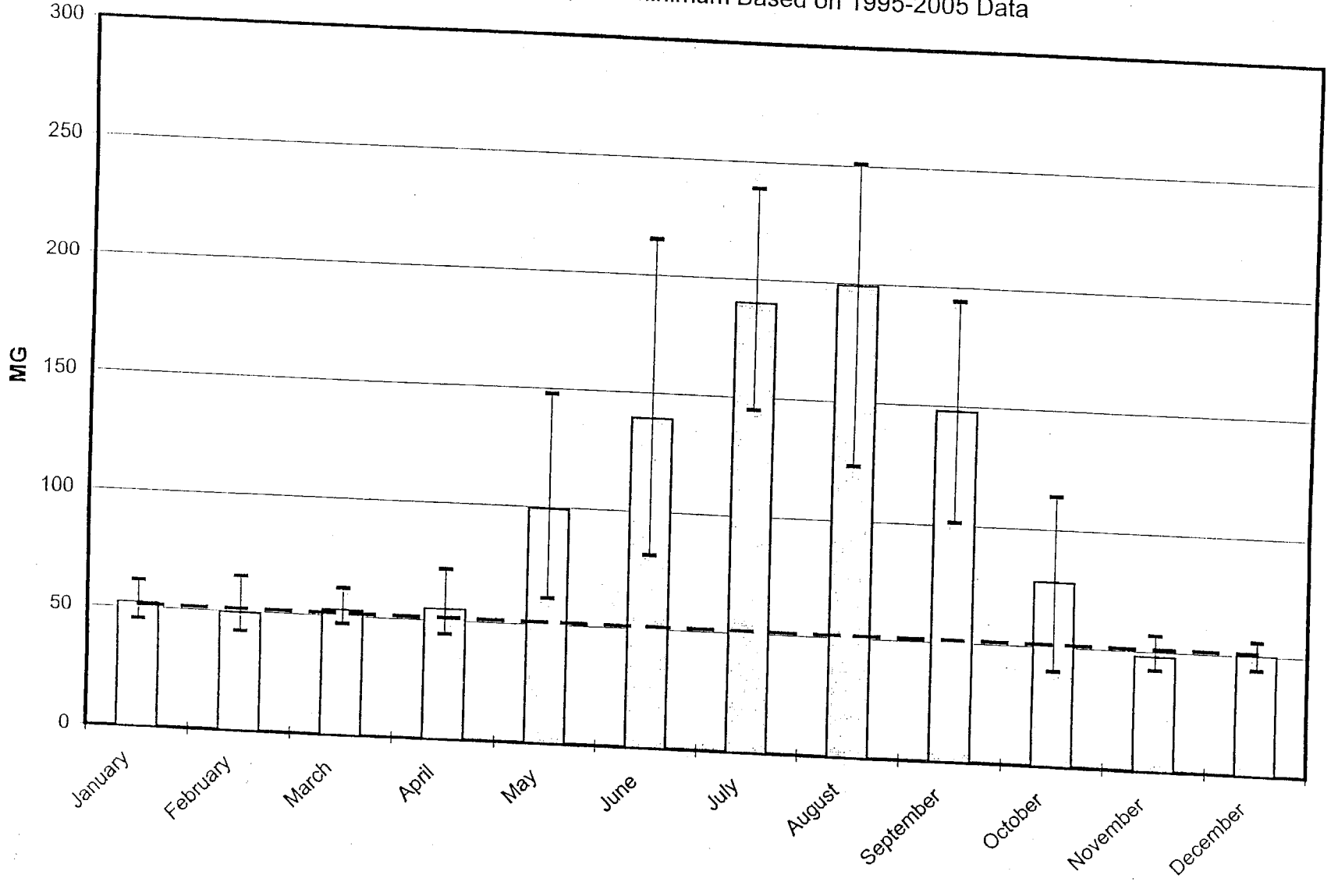
to 0.5 acres of irrigation per residence. However, based on a recent teleconference with the Director (see Section C), it appears that in the future only in-house water usage will likely be exempt from curtailment.

Based on this information, the City of Hailey could potentially benefit significantly if some portion of its groundwater pumping were mitigated. The City owns one surface water right which could potentially be donated to the mitigation plan.

D.1. Water demand analysis

Water usage records were obtained from the city engineer for the years 1995 through 2005. On average, the City uses 1,116 million gallons (MG) annually, of which 513 MG is supplied from the Indian Creek source and 647 MG is supplied from the wells. As is typical for any municipality, water usage is relatively low and constant in the non-irrigation season and increases markedly in the summer months. Figure 6 shows the City's monthly average, maximum, and minimum water usage for the 1995 – 2005 period (there does not appear to be any significant trends in the data that cannot be explained by drought or wet conditions, so no de-trending of the data was done to create this graph). The peak month is typically August (199 MG average), but there is large variability in the water usage, ranging from 123 MG to 251 MG.

Figure 6. City of Hailey Monthly Water Usage
Average, Maximum, and Minimum Based on 1995-2005 Data



Brockway Engineering, PLLC 5/27/2008

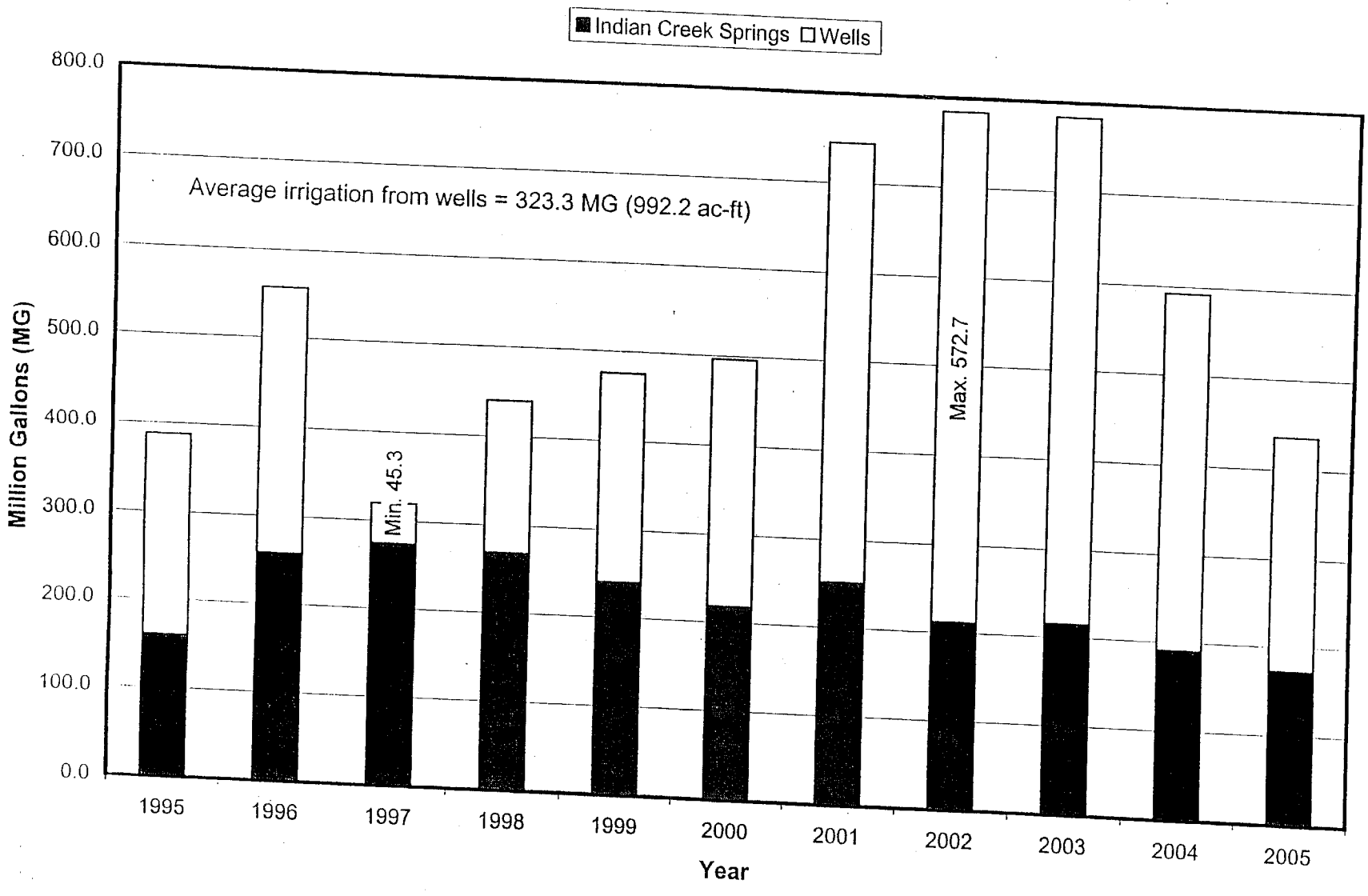
Hailey data analysis.xls:Chart1 Page 1

The Indian Creek source provides a relatively constant supply within any given year, but the total annual volume from the spring source has declined markedly from 653 MG in 1998 to 377 MG in 2005. This trend may be the result of drought conditions reducing the natural recharge supplying the spring. In 1995 through 1998, the spring supply increased from 425 to 653 MG, likely reflecting the above-average water supply in those years.

The portion of the City's water usage that may be subject to curtailment is the irrigation usage occurring from groundwater. The volume of irrigation usage each year from May through October was calculated by subtracting the average baseline water usage of 51.2 MG/month based on the non-irrigation season months. It is assumed that, during the irrigation season, the entire Indian Springs source is utilized for irrigation. This assumption is based on the most recent guidance from IDWR to the effect that a municipal right which is unrestricted as to irrigation could be assumed to supply only irrigation within the municipality. For each year, the Indian Springs supply was subtracted from the irrigation total to arrive at the volume of irrigation water supply by the wells.

Figure 7 shows the results. Because of the declining spring supply and the recent drought, the wells have provided an increasing fraction of both the total water and the irrigation water demand, with the maximum occurring in 2002. On average, the wells have supplied 323.3 MG (992.2 acre-feet) for irrigation. Even though this water was used for irrigation, the consumptive component is less than 100% due to irrigation inefficiency. For mitigation purposes, IDWR may allow the City to reduce this amount to reflect the estimated consumptive use. This can be done either by assuming a typical

Figure 7. City of Hailey Irrigation Water Usage 1995 - 2005



residential efficiency for unmetered services, such as 65%, or by calculating the irrigated acreage within the City and estimating the actual consumptive use of these acres. If 65% is assumed, the consumptive use from groundwater would be 210.1 MG (644.9 acre-feet).

D.2. Surface water available for mitigation

The City of Hailey owns one surface water right (37-10717) from the Big Wood River which may potentially be useful for mitigation purposes. This water right has a priority date of 3/24/1883 and is a portion of the former W.T. Riley right that the city acquired in conjunction with the Woodside development in the 1970s. It is delivered from the river to the City via the Hiawatha Canal. Water District 37 records indicate that this water right has been diverted into the Hiawatha Canal. Although originally an irrigation right, the City claimed it in the SRBA for municipal purposes and it was recommended as such for 2.86 cfs, with no restriction placed on the right as to irrigation usage or total annual volume. Therefore, this entire right could be used for irrigation within the City service area if the distribution infrastructure would allow it. An existing mainline with risers through the cemetery from the Hiawatha Canal suggests that this right was used to irrigate the cemetery.

The State treats municipal rights differently from all others. A municipality may hold a water right, unused, for "reasonably anticipated future needs" without jeopardy of forfeiture. Further, IDWR has consistently assumed that municipal water rights are 100% consumptive, whether or not this is true in any particular case, because a city would be within its right to dispose of its wastewater in a manner which is 100%

consumptive (e.g. total evaporative lagoons). If IDWR were to be consistent and assume that 37-10717 was 100% consumptive, they should allow a consumptive "credit" toward a mitigation plan equal to the authorized discharge rate (2.86 cfs) diverted continuously for the entire irrigation season. From May 1 through October 31, this volume equates to 1,044 acre-feet which could mitigate for more than the City's average groundwater irrigation withdrawal.

However, the Director of IDWR was unequivocal that if a municipal water right was offered as mitigation for a consumptive groundwater right, IDWR would evaluate the actual historical usage under that right to determine the amount of consumptive "credit" that could be allowed toward mitigation. Because forfeiture is tolled pending the adjudication, a period of up to 5 years prior to the claim filing in 1987 can be used to evaluate the historic usage. In the case of water right 37-10717, historical usage by the City appears to be limited to the irrigation of the cemetery, which covers approximately 15 acres. Anecdotal evidence supplied by the previous cemetery board chairman indicates that the water from the Hiawatha Canal was used through the early 1980s to irrigate the cemetery, after which they switched to the City system. It appears unlikely that any usage greater than the cemetery irrigation has occurred for many years prior to 1987.

Assuming a per-acre consumptive use of 2.2 ac-ft/acre, a 15-acre historic use would provide 33 acre feet (10.75 MG) of consumptive credit for a mitigation plan if the surface right is active through September 30. A priority date of 3/24/1883 is an excellent right on the Big Wood River, and has been active through September 30 in 71% of the years based on historical cutoff data.

E. Blaine County School District Potential Participation

The Blaine County School District is being evaluated as a potential participant in the recharge mitigation plan. From IDWR records, the District owns both surface water and groundwater rights as shown in Table 4.

Water rights used to irrigate lands around the Wood River Middle School are surface rights from the Big Wood River, and therefore are not candidates for the recharge mitigation plan. Woodside Elementary grounds are irrigated from groundwater using both a licensed right with a 1972 priority date (5 acres), and a recently-approved permit (2 acres) which is mitigated with a portion of surface water right 37-21114. The 1972 groundwater is not mitigated. The High School grounds and ball fields are irrigated from groundwater using two licensed rights with priority dates of 1966 (10.6 acres) and 1993 (22.9 acres). The 1993 groundwater right is mitigated with a portion of 37-21114.

The school district owns water right 37-21114, a surface right from the Big Wood River with a priority date of 3/24/1883. This is a portion of the original Riley right. A portion of the right has been used to mitigate for permit 37-21177 and 37-8821, but 13 acres of irrigation are remaining on the right (the school district has objected to the SRBA recommendation, asserting the remaining irrigation should be 15 acres). The water right is currently appurtenant to land which is now Deerfield Subdivision, which appears to be the original place of use of the right prior to development of the subdivision and the right being sold to the school district. The irrigation portion of the right is not being directly used for irrigation. Deerfield Subdivision is served by the City of Hailey water system. The right has been recommended in the SRBA and would be available for use as a mitigation right within a recharge project.

Table 4. Blaine County School District water rights, recommended in the SRBA.

NO.	SOURCE	PRIORITY	CFS	USE	ACRES	REMARKS
37-183A	Big Wood River	5/1/1888	0.885	Irrigation	20.8	Wood River Middle School
37-298C	Big Wood River	9/18/1885	0.21	Irrigation	20.8	Wood River Middle School
				TOTAL	**20.8**	
37-21409	Groundwater	7/27/1972	0.19	Irrigation	5.0	Woodside Elementary
37-21177	Groundwater	11/17/2003	0.08	Irrigation	2.0	Woodside Elementary Permit, mitigated by 37-21114
				TOTAL	**7.0**	
37-20903	Groundwater	7/21/1966	0.19	Irrigation	10.6	High School area
37-8821	Groundwater	5/24/1993	0.80	Irrigation	22.9	High School area. Late-priority right not in SRBA. Mitigated by 37-21114
				TOTAL	**33.5**	
37-21114	Big Wood River	3/24/1883	0.38 0.68	Irrigation Mitigation	13.0*	"Parked" on Deerfield subdivision. *Objection by BCSD – should be 15 acres.

As in the case of the City of Hailey municipal right, IDWR will likely evaluate the historic use of any water right offered for mitigation, specifically the historic consumptive use. In the case of 37-21114, the current consumptive use on the 13 acres is essentially zero; however, because the forfeiture clock is tolled pending the SRBA, the usage of the water can be evaluated for up to 5 years prior to the filing of the adjudication claim. In the recent transfer to convert a portion of the right to mitigate 37-21177 and 37-8821, the Department made a determination that the right was valid and adequate historic use had been shown to allow the right to be used for mitigation. Therefore, the 13 acres should be available on a one-for-one basis to mitigate for an equivalent acreage from groundwater. Currently, the amount of unmitigated groundwater includes 5.0 acres at Woodside Elementary (37-21409) and 10.6 acres at the High School (37-20903). These are moderately early groundwater rights (1972 and 1966 priorities, respectively), but would not be immune from conjunctive management due to a call by a water right holder in the Big Wood River. It appears that 13.0 of the 15.6 acres of unmitigated groundwater could potentially be mitigated by dedicating the remaining irrigation under 37-21114 to a recharge plan. If the objection to 37-21114 is successful, 15.0 acres would be available. In this concept, since an irrigation right would be used to mitigate another irrigation right, IDWR would not likely require an evaluation of the per-acre historic consumptive use; i.e. it would be sufficient to show that the right had been used to irrigate any crop.

F. Recharge System Design Factors

This section describes a conceptual plan for taking delivery of the surface water and utilizing it in a managed recharge system. The existing water rights on the Peregrine

Ranch, plus water rights contributed by any other participant, would be delivered to the recharge facility via the Hiawatha Canal. Water deliveries from the canal are managed by the Hiawatha Canal Company. The preliminary location for the recharge facility will be in the southwest corner of the Peregrine Ranch, in the NE1/4 SE1/4, Section 32, T. 3 N., R. 18 E. Water would be diverted from the canal through the same headgate currently used, conveyed to the Peregrine Ranch in a pipeline, and delivered to the main irrigation pumping pond. Water would then flow westward in a channel and be recharged in an unlined pond (see Figure 8).

F.1. Preliminary Design Volume

The size of the recharge facility is a function of the volume of water to be recharged, and the expected duration over which the volume is to be recharged. The number of participants in the program and hence the actual volume cannot be known at this time, but a conservative estimate can be made by assuming the participants and the number of acres contributed to the system are as follows:

Peregrine Ranch	27.6 acres
City of Hailey	15 acres
Blaine County School District	13 acres
TOTAL	55.6 acres

Assuming a conservatively high per-acre recharge volume of 3.0 acre-feet per acre, the recharge volume would be 166.8 acre-feet per year. The period over which the water right(s) will be active and available will vary each year, but a conservatively short duration would be 60 days. 166.8 acre-feet recharged over 60 days equates to an average recharge rate of 1.40 cfs.

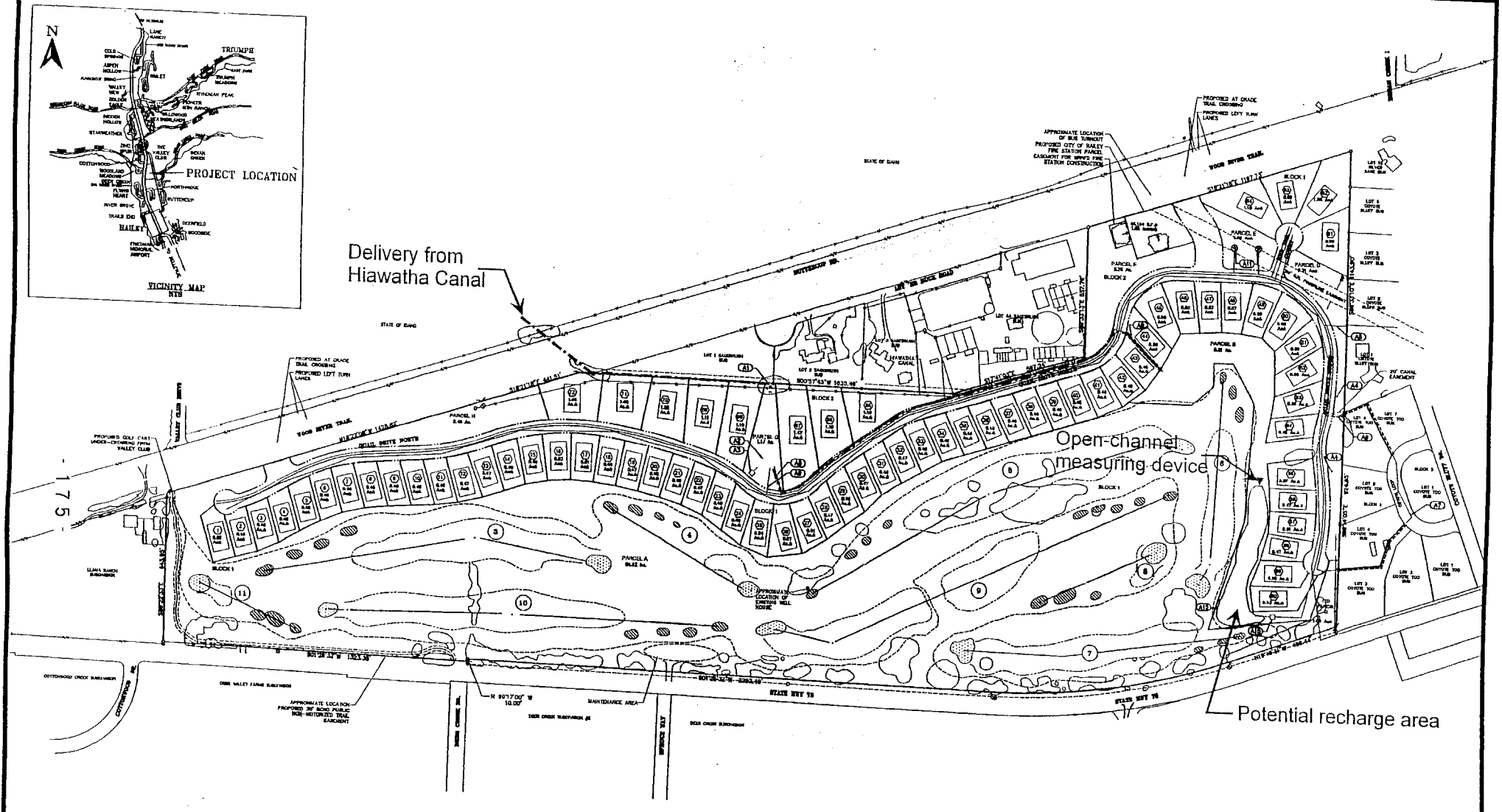


Figure 8. Potential recharge system infrastructure.

Brockway Engineering
May 5, 2008

F.2. Soils and Infiltration Rate

The soils underlying the recharge pond must be sufficiently permeable to sustain the preliminary design rate of 1.40 cfs calculated above. According to published information by the Natural Resources Conservation Service, the soil unit at the recharge site is the Balaam-Adamson Complex. This is a gravelly-cobbly soil with a high infiltration rate. The saturated hydraulic conductivity given by the NRCS is 40 ft/day, which is extremely high. Recent testing performed by Brockway Engineering at another potential recharge site with similar soils indicated a sustainable infiltration rate of about 15 ft/day. With such high infiltration rates, the potential may exist for contamination of the groundwater, should undesirable elements exist in the surface water supply. Therefore, the recharge system will likely be designed to incorporate a rapid sand filtration layer which will limit the infiltration to a constant rate of 1.5 ft/day. Refer to the discussion in Section F.4.

F.3. Preliminary Pond Area

With a design infiltration rate of 1.5 ft/day and a required recharge flow of 1.40 cfs, the area of pond would need to be 1.85 acres, or 80,600 ft2. This area is available at the location shown on Figure 8. The flow rate directed to the recharge pond would be regulated with an automatic valve to ensure that the pond level remains relatively constant through the recharge period. If the surface rights are cut, no water would be available for recharge and the pond would drain.

F.4. Water Measurement and Reporting

Accurate measurement of the volume of water recharged will be a critical component of the recharge system management. The volume of water recharged can be easily measured using standard open-channel devices. Adequate fall exists at this site to allow a wide latitude in device selection, e.g. sharp-crested weir, ramped broad-crested weir, or Parshall flume. A sensor and data recorder will be installed to allow continuous flow recording and totalizing. Accurate measurement and recording must also be implemented on the groundwater sources being mitigated. Measuring devices on each well should be IDWR-approved devices, preferably magnetic meters, with continuous flow recorders and totalizers.

Each year, a report to IDWR will be required outlining the volumes of surface water recharged, groundwater pumped, and other pertinent data to verify that the mitigation plan conditions had been met. The system operation, including measurement and reporting, would be included in the duties of the water system operator for the Peregrine Ranch. It is likely that groundwater quality monitoring may be required if the groundwater quality in adjacent wells are an area of concern.

F.5. Water Quality Considerations

The quality of the surface water used for recharge should be considered in the system design to ensure the groundwater quality is adequately protected. Surface water quality in the Big Wood River has historically been excellent in terms of important groundwater parameters such as nitrate-nitrogen. During spring runoff, suspended solids in the river water increases, but these solids will be adequately filtered by the recharge pond and the prevailing soils prior to reaching the aquifer. The surface water may contain

microorganisms which can be detrimental to human health, such as coliform, giardia, and cryptosporidium.

Because of the use of surface water to replenish the aquifer, managed recharge facilities are of interest to the Idaho Department of Environmental Quality (DEQ). Although the "groundwater quality rule" authorizes DEQ to regulate activities that may cause degradation to groundwater quality, no consistent policy, approved methods, guidance document, or permitting program has been implemented to address managed recharge projects. Using other similar activities as a guide, DEQ will likely request a characterization of the surface water quality and a demonstration that the proposed activity will protect the groundwater resource and will adequately treat the surface water prior to entering the groundwater. Toward this end, good engineering practice would dictate that the infiltration rate be limited by sand filtration to significantly less than the natural soils would allow. A value of 1.5 ft/day has been selected for planning purposes, but has not been validated or adopted by DEQ. In aquifers without an adequate network of existing wells, DEQ staff has proposed installation of monitoring wells. In the case of the Big Wood aquifer, many wells are available in the vicinity which could be utilized for monitoring purposes.

G. Administrative Procedures

A recharge plan cannot take place without explicit authority from IDWR. The procedure to obtain such authority would be as follows:

1. Develop a preliminary mitigation plan. Identify the water rights offered for mitigation, the water rights to be mitigated, and elucidate a hydraulic and hydrologic analysis to demonstrate how the groundwater usage can be

adequately mitigated without injury or enlargement. This step will require substantial engineering effort, including groundwater modeling.

2. Submit the preliminary mitigation plan to IDWR and commence discussions with the Director of IDWR and his staff. The novelty of the recharge mitigation idea, particularly in the Big Wood Valley, and the fact that no explicit procedures are in place, requires the involvement of the Director from the beginning.
3. Once a consensus is reached with IDWR as to the details of the plan, prepare a final mitigation plan and the necessary water right transfers to convert portions of the various water rights to mitigation.
4. Submit the final mitigation plan and associated water right applications to IDWR.
5. IDWR approves the plan and the transfers, and authorizes implementation of the recharge mitigation plan.

The transfer applications will be advertised and subject to protest by any party. The above timeline assumes that the applications are not protested. The estimated time to complete the above steps is 24 to 30 months.

H. Conclusions

The contemplated Peregrine Ranch Recharge Project appears to be feasible from both engineering and regulatory standpoints. General conclusions of the feasibility study include the following.

1. Groundwater rights used by the Peregrine Ranch as a supplemental supply and by municipalities and other entities will likely be in jeopardy of curtailment when conjunctive management is implemented in the Big Wood basin.

2. A program to mitigate consumptive groundwater uses by implementing and aquifer storage and retrieval (recharge) plan, using existing consumptive surface rights, can provide a benefit to the Peregrine Ranch, the City of Hailey, and Blaine County School District, as follows:
    a. Peregrine Ranch: with the groundwater rights fully curtailed, a full-season supply through September 30 could be provided in 69% of the years, compared to 24% of the years without a mitigation program.
    b. City of Hailey: Assuming the historic use of the City's water right will be limited to the consumptive use on 15 acres of irrigated land, the surface right can mitigate for 33 acre-feet out of the total estimated irrigation consumptive use of 644.9 acre-feet. Mitigation value may be greater if IDWR considers the surface right to be worth more due to its municipal nature.
    c. Blaine County School District: Of the 15.6 acres of unmitigated groundwater rights, the district's surface water right should be available to mitigate either 13 acres (if the current SRBA recommendation stands) or 15 acres (if the district is successful in its objection to the recommendation).
3. Infiltrating the required volume of water over a conservative recharge period of 60 days is feasible at the Peregrine recharge site, given the space available and the prevailing soils.
4. Maintenance and monitoring of the plan can be incorporated into the duties of the water manager for the Peregrine Ranch potable and irrigation systems.

5. Approval of the recharge plan and water right transfers by IDWR will be required, including hydrologic evaluations and groundwater modeling to demonstrate that other water users will not be injured.
6. IDEQ will be interested in the project and may impose certain constraints to protect the groundwater quality, but no action to date by IDEQ would indicate that the plan cannot be implemented.

AGENDA ITEM SUMMARY

DATE: 06/04/2008 **DEPARTMENT:** Finance & Records **DEPT. HEAD SIGNATURE:**

SUBJECT:

Calling of Special City Election August 5, 2008 / Referendum petitions to repeal:

- Chapter 5.02 of Title 5, Business Licenses and Regulations
- Hailey Ordinance 985, Development Impact Fees (Chapter 15.16)

AUTHORITY: ☒ ID Code Section 34-106 or 50-436 ☐ IAR _____ ☒ City Ordinance/Code 1.16.080.B

Idaho Code requires that an election be called by the clerk when a referendum petition has been successfully perfected and certified.

BACKGROUND/SUMMARY OF ALTERNATIVES CONSIDERED:

Municipal Code Chapter 1.16.080.B. In the event that a petition filed with the City Clerk is found by the City Clerk to contain the required number of certified signatures, the City Clerk shall promptly, by certified mail, inform the petitioners, and shall also notify the City Council at its next meeting that the initiative or referendum petition is in proper form, and an election shall be ordered by the City to be conducted citywide. A special election for initiative or referendum shall be provided at the next available date for election as set by Idaho Code Section 34-106, as amended, for which there is adequate time for publication of election notice pursuant to Idaho Code Section 50-436, as amended.

As of Council Packet production, both referendum petitions are being reviewed by Blaine County. If the petitions bear the required number of certified signatures, a handout will be provided at the council meeting. If the petitions do not bear the required number of certified signatures, this item will be pulled from the agenda.

FISCAL IMPACT / PROJECT FINANCIAL ANALYSIS: Caselle #_____

Budget Line Item #_____ YTD Line Item Balance $_____

Estimated Hours Spent to Date: Estimated Completion Date:

Staff Contact: Phone #

The cost of this election is estimated to be $3,000, not including city staff time.

ACKNOWLEDGEMENT BY OTHER AFFECTED CITY DEPARTMENTS: (IFAPPLICABLE)

___ City Attorney	___ Clerk / Finance Director	___ Engineer	___ Building
___ Library	___ Planning	___ Fire Dept.	___ _____
___ Safety Committee	___ P & Z Commission	___ Police	___ _____
___ Streets	___ Public Works, Parks	___ Mayor	___ _____

RECOMMENDATION FROM APPLICABLE DEPARTMENT HEAD:

Determine form of ballot. Clerk's Office recommends preparing summarized ballots, as the text of the proposed ordinances is considerably lengthy, particularly in the case of the Development Impact Fee ordinance. Summarized ballots would need to be completed for review at June 23 City Council meeting. Ballots must be finalized by July 1.

1.16.090 Form of ballot.

The city council shall prepare a ballot for an initiative or referendum election in one of the following ways:

A. If the full text of the ordinance or proposed ordinance to be voted on does not exceed one hundred words in length, it may be set out in full on the election ballot; or

B. If the full text of the ordinance or proposed ordinance to be voted upon exceeds one hundred words in length, and the council votes not to have it printed at length on the election ballot, it shall, with the assistance of the city attorney, prepare a short title and description of the ordinance or proposed ordinance which shall clearly and impartially state its purpose and effect, which short title and description shall be printed on the election ballot. (Ord. 393 §9, 1979)

ADMINISTRATIVE COMMENTS/APPROVAL:

City Administrator _____ Dept. Head Attend Meeting (circle one) Yes No

ACTION OF THE CITY COUNCIL:

Date _____

City Clerk _____

FOLLOW-UP:

*Ord./Res./Agmt./Order Originals: *Additional/Exceptional Originals to: _____

Copies (all info.): Copies

Instrument # _____

STAFF REPORT

TO: Hailey City Council

FROM: Becky Stokes, Treasurer

RE: Water Conservation Opportunities

DATE: June 9, 2008

Michael Olenick attended the HELP meeting last week to discuss ideas regarding water conservation. His initial concerns were spawned by the City of Hailey's return to Odd/Even watering, as he has installed drip irrigation in his beds and used drought tolerant fescue for lawn. In addition, he buried sensors, which monitor soil moisture and control the irrigation. Depending on rainfall, temperatures and humidity, watering every three to five days is ideal.

Mr. Olenick's hope is to be allowed to water differently than the odd/even requirement. Chief Gunter is hesitant to agree to exceptions, as the HPD is actively monitoring and enforcing the Odd/Even Ordinance. Tom Hellen shares these concerns. HELP would like to develop a system and criteria by which a concerned resident could apply to be a "showcase" lawn, then exempt from the Odd/Even restrictions. Suggested criteria include:

1) Trout-Friendly Lawn
2) A Certified Water Audit
3) Drip Irrigation in appropriate areas
4) A detailed plan and water budget
5) Removal of flexibility should water consumption increase beyond predetermined amount.

In addition to flexibility in watering, additional incentives might be considered, such as:

1) Partial reimbursement for a certified Water Audit
2) Partial reimbursement for water-tolerant turf fescue
3) Partial reimbursement for retrofitting traditional spray heads with drip systems....
4) Partial reimbursement for installation of soil moisture sensors

Kathryn Goldman of Wood River Land Trust welcomes the opportunity to assist with City of Hailey conservations measures. She has written up some ideas and offered some web sites, which follow this Staff Report. In addition, Cody Farnworth, Certified Water Auditor (Clearwater Nursery), has found that irrigation consumption may be cut in half by following recommendations from a water audit. Cities that have offered partial rebate of water audits have been pleased with the reductions.

Kathryn Goldman (WRRT), Cody Farnworth (Clearwater Nursery) and Michael Olenick (concerned citizen) have been invited to attend the Council meeting and are happy to answer questions.

Water Conservation and Partnership Opportunities
Wood River Land Trust

Wood River Land Trust (WRLT) created its Trout Friendly Lawn program in 2007 to educate the community on how to improve yard care practices to protect fish, conserve water and keep our drinking water and streams clean. Wood River and its aquifer. This year, WRLT will be working with some of the largest landscape companies in the valley to encourage residents and businesses to conduct a discounted irrigation assessment on their properties to make water use more efficient. WRLT is also working with the local Hailey committee, Hailey Environmental Leadership Program (HELP), to spread the word on water conservation.

We submit the following items to the city for consideration as the council and city staff strive to protect our water and meet the water needs of the community.

- **Water budget:**

A water budget sets community expectations about how much water per square foot property owners should be using for outdoor use as well as standard figures for indoor use specific to different types of water customers. . The tool is successfully used in combination with a block rate structure in Boulder, Colorado. The City of Boulder used customer specific data and conservation targets to calculate the budget for various lot sizes. According to Paul Lander, Water Conservation Officer for the City of Boulder's water department, nearly a dozen communities have adopted a water budget for educational purposes and find success using it as a guideline in combination with education and outreach (see article and web site below for complete information on water budgets). These communities have yet to go to a block rate structure. The City of Boulder currently promotes twice weekly watering as the conservation standard on a voluntary basis. WRLT would welcome the opportunity to use a city-adopted adopt water budget for use in our Trout Friendly Lawn campaign.

- **Odd/Even restrictions:**

Some communities that rely on this restriction allow for watering three times a week and employ one day during the week when no watering is allowed. This allows water tanks to replenish for emergency reserves. Education and outreach is critical to this method of promoting conservation.

- **Incentives for water conservation on properties served by city water:**

Rebates for drip irrigation, irrigation audits and other technologies water customers can employ to reduce their summer outdoor water use are excellent steps to promote conservation and have been implemented in other communities. Rebates are cheaper than the costs of meeting increases in demand with additional supplies and storage tanks. Rebates are usually a percentage of the purchase price and have a maximum cap.

- **Landscaping requirements:**

Incorporating new native and drought tolerant planting requirements in to new subdivisions and business developments will protect water quantity and quality as we

grow. Specifically, the city should consider requirements and/or incentives for the use of new turf products that meet xeric plant requirements.

Resources:

Please see the American Water Works Associations **Journal AWWA.** May 2008, Volume 100, Issue 5. Water budgets and rate structures: Innovative management tools.
Web Resource:
Water budgets: www.bouldersaveswater.net
Water Efficiency: www.westernresourceadvocates.org/water/wateruse.php
Irrigation: www.irrigation.org