ADMINISTRATIVE MEMORANDUMS INDEX

As of January 26, 2016

Please note that these Administrative Memorandums will include many memos that have become outdated due to changes in rules, statutes or current Department policy. Some memos have been amended or superseded by others, and some may no longer be applicable.

TRANSFER PROCESSING

No.	Title	Signed	Amended or Superseded
1.	**Field Examination of Claims to a Water Right on Which Transfer Applications have been Filed** All claims in which a transfer has been filed will get a field exam.	**4-7-75**	
2.	**Determination of Conveyances Losses** Any information used to determine conveyance losses or gain should be in the file.	**1-16-78**	
3.	**Completion of the Transfer Form** Part A must describe the right as presently recorded, Part B is only used when a portion of the right is owned before the change and Part C is after the change.	**8-11-76**	
4.	**Transfers of Water Rights** If transfer application submitted and no problems are apparent, the watermaster can continue on a review basis until transfer is completed.	**4-22-77**	
5.	**Measuring Device Requirements on Transfers** Measuring device conditions will only be placed on transfers within water districts.	**12-19-77**	
6.	**Expansion of a Water Right Via a Transfer** Guidance on determining if there is expansion regarding rate of flow, volume and consumptive use.	**9-27-82**	
7.	**Sample Calculations for Change in Nature of Use** Table of consumptive use and consumptive irrigation requirements for quantitative evaluation to avoid expansion. Includes map, tables, and examples.	9-24-82	**10-29-84**
8.	**Point of Diversion Description** Amendment is needed to change the tract a POD is in if it's different from what's on the permit. A transfer is needed when it's a claim, license or decree even if they're just adding a POD in same tract.	**5-10-84**	
9.	**Transfer of a Decreed Water Right** If a decree identifies a tract as the POU rather than a defined number of acres within the tract the applicant must provide an aerial photo from which the number of acres irrigation in tract can be determined.	**8-7-84**	
10.	**Transfer of Water Rights from Encumbered Lands** Every application must identify if the land is subject to any encumbrances—if the answer is yes then you must provide a notarized statement.	**1-24-86**	

TRANSFER PROCESSING			
No.	**Title**	**Signed**	**Amended or Superseded**
11.	**Legal Advertisements** Adding the regional offices contact information to the legal notice to avoid confusion on the location of the application for permit/transfer.	**1-30-89**	
12.	**Transfers Based on Adjudication Claims** No transfer is necessary when the decreed right is different from what is claimed. If a transfer is filed on one of these claims, evidence of title to the original right must be presented.	**4-17-89**	
13.	**Transfers of a Water Right - Confirmation of Change** Changed authorized by transfer need to be accomplished within 1 year. Department may verify through field exam.	**10-9-90**	
14.	**Transfer Approvals** In order to minimize opportunity that users can preclude the review of water rights for which transfers have recently been approved, a condition has been added as a standard to transfers that are in the SRBA.	**1-31-91**	
15.	**Transfer Application Processing & SRBA Claim Amendments** When a statutory right is changed by an approved transfer, the claim must be amended. Each approved transfer will be treated as the departments notice of an amendment to the claim.	**6-3-91**	
16.	**Standards for Irrigation Consumptive Use Requirements, Irrigation Field Headgate Requirements, and Irrigation Season of Use** Maps and guidelines on standard season; use the standard regardless of what's on the application for permit. When dealing w/ a transfer use what was decreed or licensed—can use condition to include new standard	4-27-92	**10-12-99**
17.	**Implementation of House Bill No. 4 - Temporary Change Authority for Existing Water Rights** Allows expedited approval of changes to existing water rights without the need to provide public notice of the change.	7-29-92	**5-14-14**
18.	**Implementation of Section 42-222A, Idaho Code – Temporary Change Authority for Existing Water Rights** Guidance regarding temporary changes to water rights during drought conditions including Transfer Processing Memo No. 17.	6-23-94	10-3-94 **5-14-14**
19.	**Review of Apps. for Permit on a State Protected River Reach or within a Minimum Stream Flow Reach** A copy of the application should be provided to the Water Planning Bureau for review and comment if the action will affect a MSF reach	**8-16-99**	
20.	**Changes to Water Right Applications** Procedure for amending/correcting an application for permit or any other application. Note: the department never should write on an application w/o the applicant's initials and additional information should be requested in writing.	**1-12-00**	
21.	**Diversions from State Protected River Reaches** All applications on a protected stream reach need to be conditioned to avoid prohibitions defined in the Comprehensive State Water Plan	**1-24-00**	

TRANSFER PROCESSING			
No.	**Title**	**Signed**	**Amended or Superseded**
22.	**Adjudication Claims Tolling Forfeiture and/or Fish Propagation Facility Volume** For fish propagation rights, do not include facility volume on permit or license and after claim is filed in SRBA, period of non-use should be considered.	**3-24-00**	
23.	**Further Guidance on SB 1337, Amending Section 42-221, I.C.** Transfer fees are based on quantity being transferred.	**1-2-01**	
24.	**Transfer Processing Policies & Procedures (Interim Policies & Procedures Currently Applicable for Applications to Transfer Ground Water in the Eastern Snake River Plain Only)** Guidance for evaluating if the proposed transfer would injure other water rights, cause enlargement, be of beneficial use, be in local public interest, be consistent with conservation of Idaho water resources, and impact the agriculture base of the local area. Also need to evaluate if the water right is valid and does the applicant have the authority to file.	10-30-02	1-21-09 **12-21-09**
25.	**Conditional Protest Withdrawal for Resolution of a Contested Application** If protest withdrawal proposes conditions the department must determine they are appropriate. If they are unacceptable a letter of explanation must be sent, if they are acceptable then an acknowledgment of withdrawal should be made.	**7-29-03**	
26.	**Consumptive Use for Ponds** The annual volume of consumptive use associated with evaporation from ponds can be considered equivalent to the mean annual consumptive irrigation requirement for alfalfa hay.	**2-23-04**	
27.	**Water Rights Dedicated for Mitigation Protected from Forfeiture** Scenarios where mitigation right will not be forfeited: change in use of right to ground water recharge, mitigating a transfer, permit, or exchange by non-use, release of storage water, or water to be left in a ditch or canal.	**05-03-10**	
28.	**Utilization of the 24-Hour Fill Allowance for Impoundments** Statement of the policy and practical implementation of the 24-hour fill allowance that historically been used by the Department.	**04-18-13**	
29.	**RAFN Municipal Water Right Handbook** Recommendations for the Processing of Reasonably Anticipated Future Needs (RAFN) Municipal Water Rights at the Time of Application, Licensing, and Transfer.	**11-13-13**	**3-16-15**
30.	**Seepage Loss Standards for Ponds and Reservoirs Spreadsheet - Pond Loss Calculation** Memo establishing guidelines for reviewing seepage losses from ponds and reservoirs to ensure that water rights for storage promote efficiency by meeting a reasonable conservation standard.	**3-5-15**	

Transfer Processing N[illegible]1

April 7, 1975

OPERATIONS DIVISION
ADMINISTRATOR'S MEMORANDUM

TO: District Offices

FROM: A. Kenneth Dunn

SUBJECT: Field examination of Claims to a Water Right on which transfer applications have been filed

Beginning immediately, field examinations will be made on all claims to a water right on which transfer applications have been filed. The examination form that is presently being used for permit examinations can be adapted for this use, however, it may be necessary to review old county records or old aerial photos to determine if the use claimed is valid.

This examination report should be submitted at the time you make your recommendations on the final action to be taken on the transfer.

A. Kenneth Dunn

JANUARY 16, 1978

Transfer Processing No. 2

State of Idaho

DEPARTMENT OF WATER RESOURCES

STATE OFFICE, 373 W. Franklin Street, Boise, Idaho

JOHN V. EVANS
Governor

C. STEPHEN ALLRED
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 384-2215

MEMO

TO: REGIONAL OFFICES

FROM: BOB FLEENOR, CHIEF, REGIONAL OFFICES BUREAU Bob

RE: DETERMINATION OF CONVEYANCE LOSSES

Any information used to determine conveyance losses or gains should be included in water right file. Included should be any field measurements or notes, calculations, assumptions, etc. Determining conveyance losses usually occurs only with transfers and exchanges but may be necessary on permits or licenses as well.

In the past all that has been placed in the file is the percent loss to be charged to the right. This additional information will make the file more complete and facilitate answering future questions.

MEMORANDUM

TO: REGIONAL OFFICES

FROM: BOBBY D. FLEENOR

RE: COMPLETION OF THE TRANSFER FORM

A transfer application should reflect the total effect on the original right.

Part A must describe the entire right as it presently is recorded. The entire right after the change is made is then shown in Part C even though an individual is changing only a portion of the right he owns. This procedure will allow the owner to retain greater flexibility in his use of water by not restricting a certain point of diversion or place of use to a certain amount of water.

Part B is designed to be used when only a portion of a right is owned. The entire portion owned should be described in Part B before the change and then in Part C after the change.

For example, right 13-0001 is for 1.00 cfs appurtenant to 50 acres. The applicant who owns all 50 acres, wants to change the place of use of only 10 of the acres. Part B would be omitted and Part C completed to show the 50 acres after the transfer is made.

As another example, right 13-0002 is for 20.00 cfs appurtenant to 1000 acres. The applicant, who owns only 50 of the acres, wants to change the place of use to another 50 acres for his portion. Part B would show the applicant's 50 acres that are presently irrigated, then Part C would show the 50 acres after the transfer is complete. The applicant would be required to show ownership of the 50 acres shown in Part B.

April 22, 1977

MEMORANDUM

TO: Ken Dunn

FROM: Steve Allred

SUBJECT: Transfers of Water Rights

I feel that the only way that Watermasters can be protected in the delivery of waters at points of diversion or places of use other than specified in the water rights is if that water right is modified through the transfer process. I would consider "temporary" transfers as a condition of the transfer, but I think probably they have to follow through the process. I would think that if a transfer application has been submitted, and we are not aware of any particular problems we might allow the Watermaster to go ahead on a review basis until the transfer is advertised and completed.

CSA:lm

State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 373 W. Franklin Street, Boise, Idaho

JOHN V. EVANS
Governor

C. STEPHEN ALLRED
Director

Mailing address:
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Boise, Idaho 83720
(208) 384-2215

DECEMBER 19, 1977

RESOURCE ADMINISTRATION DIVISION
ADMINISTRATOR'S MEMORANDUM

FROM: Norman C. Young NCY

TO: Regional Offices, Water Allocations Section

RE: Measuring Device Requirements on Transfers

Effective immediately, measuring device requirements will only be placed as a condition of approval, on those transfers within water districts. All transfers outside of a water district will not have the measuring device requirement as a condition of approval, however, the cover letter for the approved transfer will recommend provision for future installation of a measuring device in the system. This cover letter should be used on those transfers which, in the past, would have included the measuring device requirement.

State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

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Boise, Idaho 83720
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ADMINISTRATOR'S MEMORANDUM

Transfer Processing No. 6

TO: Regional Offices & Water Allocation Section

FROM: Norman C. Young NCY

DATE: September 27, 1982

RE: Expansion of a Water Right via a Transfer

When an Application For Transfer is received, the individual performing the initial staff analysis must take a close look at the possibility of enlargement or expansion as a result of the transfer. Item 5(h) of the Transfer Analysis Sheet indicates to "check for expansion". The purpose of this memorandum is to identify how to perform this check.

Each water right in the state is limited by three parameters: rate of flow, volume, and consumptive use. Expansion of any of these parameters must be prevented. Therefore, the following items should be checked:

1. Insure that the rate of flow is not increased by comparing the rate before and after the transfer.

2. Insure that volume is not increased by comparing volume before and after the transfer.

3. Insure that consumptive use is not increased. This factor should be carefully evaluated for transfers of place of use. First, a very precise determination should be made of all existing water rights on the original place of use (Land A), and the transferred place of use (Land B). This determination should be made using all available resources (computer, plats and maps). Then the following factors should be evaluated:

   a. When water is moved from land A to land B, land B shall not include more acres than land A. Thus, for each newly irrigated acre, one acre must be removed from irrigation.

   b. In most cases when water is moved from land A to land B, all existing water rights on land A must be moved to land B. For example, in many cases a 40 acre tract will have several decreed rights. If one of the decreed rights is transferred, they must all be transferred to the same place of use.

An exception is when a wateruser desires to transfer a "secondary" water right from land A to become a "secondary" water right on land B. This type of transfer is acceptable if the average annual volume diverted and consumptive use are not increased as a result of the transfer. For example, a supplemental groundwater right can be transferred from land A (which has decreed surface water rights) to land B (which has decreed surface water rights), if no increase in volume diverted or consumptive use results.

Another exception is when a surface water right is moved from land A to land B, leaving a junior groundwater right on land A. If the land is not located within a critical groundwater area, and if the Department would in general approve a new groundwater right on land A if an application were submitted, the existing groundwater right can be left on land A.

Each of the factors above must be evaluated for every transfer application to insure that expansion is prevented.

State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

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ADMINISTRATOR'S MEMORANDUM

Amendment to Transfer Processing No. 7

TO: Regional Offices and Water Allocation Section

FROM: Norman C. Young NCY

DATE: October 29, 1984

RE: Sample Calculations for Change in Nature of Use

The purpose of this memorandum is to amend the original version of the memorandum dated September 24, 1982, by replacing the table of data for consumptive irrigation requirements.

The original memorandum included a copy of Table 6 from "Consumptive Irrigation Requirements of Crops in Idaho," by R.J. Sutter and G.L. Corey, University Of Idaho Bulletin 516, July 1970, p.8. Recently a report has been released entitled "Estimating Consumptive Irrigation Requirements for Crops in Idaho," by R.G. Allen and C.E. Brockway, published by the University of Idaho Water and Energy Resources Research Institute, August, 1983. Information contained in this report has been utilized by Bill Ondrechen to prepare Table A, attached, which describes the Seasonal Crop Water Use Statistics for Alfalfa Hay. This table, which includes Consumptive Use (CU) and Consumptive Irrigation Requirement (CIR) data, should replace Table 6 in the above-referenced Administrator's Memorandum.

The column of data that should be utilized in the analysis of a change in nature of use transfer from irrigation to another use is the third column, Mean CIR.

State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
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(208) 334-4440

September 11, 1984

MEMO

TO: DAVE TUTHILL, WATER ALLOCATION SECTION DRT

FROM: BILL ONDRECHEN, HYDROLOGY SECTION WO

SUBJECT: NOTES ON DETERMINATION OF CONSUMPTIVE IRRIGATION REQUIREMENT AND CONSUMPTIVE USE

GENERAL

The consumptive irrigation requirement (CIR) and consumptive use (CU) (same as evapotranspiration or ET) data used in this update of Department procedures are described in the publication "Estimating Consumptive Irrigation Requirements for Crops in Idaho" by R.G. Allen and C.E. Brockway, August 1983. The document, published by the University of Idaho Water and Energy Resources Research Institute, is the completion report for the research project. Allen and Brockway selected the FAO-Blaney-Criddle method for use, as it required the least adjustment to match measured values of consumptive use. The letters FAO derive from the United Nations Food and Agriculture Organization, the entity which helped develop it.

Using information in the report as well as Appendix E supplied by the authors, values of mean consumptive irrigation requirement were plotted on a map. Regions of similar irrigation requirement were delineated on the map, with boundaries generally following those of the "Climatic Areas" of U. of Idaho Bulletin 516, by Sutter and Corey. In addition to using a different method for determining consumptive use than that used in Bulletin 516, Allen and Brockway used data from a larger number of climatic stations. Consumptive use and consumptive irrigation requirement data are now available for several areas which were undefined in Bulletin 516. These areas are: Idaho City - Centerville, Anderson Dam - Prarie, and Stanley - Sawtooth Valley. Table A lists the mean or average consumptive use for alfalfa hay, the 80th percentile consumptive use, mean consumptive irrigation requirement, and 80th percentile irrigation requirement for 98 weather stations in the state. With the exception of Table A which is an attachment to this document, all references to tables and figures are to those in Allen and Brockway 1983.

TABLE A
SEASONAL CROP WATER USE STATISTICS FOR ALFALFA HAY
(Acre Inches/Acre/Season)

Station	Mean CU	80th PCTL. CU	Mean CIR	80th PCTL. CIR
Aberdeen Exp. Sta.	37.5	40.4	33.6	38.4
American Falls 1SW	38.2	40.5	33.2	37.7
Anderson Dam	33.5	35.4	29.5	33.0
Arbon 2NW	33.0	34.6	27.6	31.6
Arco 3SW	31.6	33.8	28.0	32.9
Ashton	33.1	35.5	25.9	31.0
Bayview Model Basin	29.4	31.1	21.5	26.7
Blackfoot 2SSW	37.4	40.2	32.5	37.6
Bliss	41.1	43.4	38.1	42.2
Boise WSO AP	40.2	42.3	35.4	39.0
Bonners Ferry 1SW	31.5	33.4	24.3	28.6
Bruneau	39.8	42.0	36.5	40.8
Burley FAA AP	36.5	38.4	32.6	36.3
Cabinet Gorge	30.9	32.8	21.4	26.6
Caldwell	40.4	43.2	36.9	41.1
Cambridge	37.5	40.4	32.4	37.7
Cascade 1NW	28.6	30.3	23.1	26.7
Castleford 2N	40.6	42.5	36.4	40.4
Challis	34.7	37.1	30.7	34.4
Chilly Barton Flat	29.9	32.9	25.2	30.3
Coeur d'Alene 1E	32.5	34.4	24.6	29.8
Cottonwood	31.1	33.5	22.2	28.1
Council	37.5	39.5	30.4	35.8
Deer Flat Dam	40.8	42.4	37.2	40.5
Driggs	28.3	30.0	22.3	27.1
Dubois Exp. Sta.	30.5	32.8	25.2	30.1
Emmett 2E	40.7	43.2	36.7	41.1
Fairfield Ranger Sta.	29.4	31.0	26.3	29.9
Fort Hall	38.2	40.4	33.3	37.8
Garden Valley RS	35.3	37.3	29.2	33.9
Glenns Ferry	38.4	40.9	35.6	39.0
Grace	34.8	37.3	28.0	33.2
Grandview 2W	40.2	42.8	37.5	42.0
Grangeville	30.5	33.0	20.1	27.1
Hailey Ranger Sta.	29.0	31.1	25.6	30.1
Hamer 4NW	34.1	35.9	29.9	33.5
Hazelton	38.7	41.9	35.1	39.5
Hill City	28.8	30.7	26.1	29.7
Hollister	35.6	38.5	31.3	36.2
Howe	34.3	36.6	29.6	33.9
Idaho City	30.2	32.4	25.6	30.8
Idaho Falls 2ESE	36.8	39.0	31.6	36.0

TABLE A cont.

Station	Mean CU	80th PCTL. CU	Mean CIR	80th PCTL. CIR
Idaho Falls 16SE	33.7	35.5	26.9	30.9
Idaho Falls FAA AP	35.7	38.1	31.2	35.5
Idaho Falls 46W	32.8	35.0	28.6	32.8
Island Park Dam	24.8	26.5	18.1	24.9
Jerome	39.5	41.9	36.2	40.2
Kellogg	32.1	34.1	22.5	28.1
Kilgore	24.5	25.6	17.8	23.3
Kooskia	35.2	37.3	23.3	29.5
Kuna 2NNE	41.7	44.4	37.2	41.4
Lewiston WSO AP	37.3	39.6	30.9	35.3
Lifton Pumping Station	27.5	29.0	23.9	27.4
Mackay RS	33.7	36.3	29.1	33.6
Malad	35.4	37.8	29.2	34.5
Malad City	34.4	36.5	28.5	33.6
Malta 2E	36.4	37.9	30.9	35.0
May	28.9	31.1	24.8	28.0
McCall	27.8	29.9	21.1	25.6
Minidoka Dam	38.5	40.6	34.6	39.1
Montpelier	26.6	28.7	22.4	26.2
Moscow - U of I	33.7	36.0	25.0	30.2
Mountain Home	38.0	40.3	34.6	38.8
New Meadows RS	28.6	30.1	22.6	26.9
Nez Perce	30.6	32.3	21.1	25.3
Oakley	36.4	38.7	30.9	35.6
Ola 4S	36.5	38.3	30.9	35.1
Orofino	37.6	39.8	27.5	32.4
Palisades Dam	33.5	35.6	25.0	29.4
Parma Exp. Sta.	40.4	43.0	36.7	41.6
Paul 1ENE	38.0	40.6	34.0	38.4
Payette	41.0	43.0	37.4	40.9
Picabo	29.9	31.9	26.8	31.2
Pocatello WSO AP	37.0	39.3	32.4	36.9
Porthill	30.2	31.7	23.1	27.8
Potlatch	32.4	35.6	23.2	28.1
Preston	34.7	37.1	27.8	33.2
Reynolds	30.0	31.7	26.2	29.7
Richfield	37.0	39.3	33.7	37.9
Riggins	39.1	41.4	30.4	35.3
Rupert	38.8	41.5	35.7	39.3
St. Anthony 1WNW	29.6	31.4	25.2	28.3
Saint Maries	32.5	34.7	22.5	28.0
Salmon	32.2	33.9	27.2	30.6
Sandpoint Exp. Sta.	30.3	32.1	21.0	26.0
Shoshone 1WNW	39.1	42.0	35.9	40.3
Stanley *	22.7	23.6	18.8	21.9
Strevell	32.8	35.4	27.6	32.7

* Values are for irrigated pasture, not alfalfa hay

TABLE A cont.

Station	Mean CU	80th PCTL. CU	Mean CIR	80th PCTL. CIR
Swan Falls	42.3	44.4	38.9	42.5
Swan Valley	32.2	33.8	23.9	28.0
Tensed	31.1	32.7	22.4	27.0
Tetonia Exp. Sta.	28.2	29.8	22.3	26.9
Three Creek	26.5	28.3	22.5	26.6
Twin Falls 2NNE	39.1	41.4	35.6	39.8
Twin Falls 3SE	39.2	41.6	35.6	40.1
Weiser	39.2	41.7	35.8	39.9

TABLE A
SEASONAL CROP WATER USE STATISTICS FOR ALFALFA HAY
(Acre Inches/Acre/Season)

Station	Mean CU	80th PCTL. CU	Mean CIR	80th PCTL. CIR
Aberdeen Exp. Sta.	37.5	40.4	33.6	38.4
American Falls 1SW	38.2	40.5	33.2	37.7
Anderson Dam	33.5	35.4	29.5	33.0
Arbon 2NW	33.0	34.6	27.6	31.6
Arco 3SW	31.6	33.8	28.0	32.9
Ashton	33.1	35.5	25.9	31.0
Bayview Model Basin	29.4	31.1	21.5	26.7
Blackfoot 2SSW	37.4	40.2	32.5	37.6
Bliss	41.1	43.4	38.1	42.2
Boise WSO AP	40.2	42.3	35.4	39.0
Bonners Ferry 1SW	31.5	33.4	24.3	28.6
Bruneau	39.8	42.0	36.5	40.8
Burley FAA AP	36.5	38.4	32.6	36.3
Cabinet Gorge	30.9	32.8	21.4	26.6
Caldwell	40.4	43.2	36.9	41.1
Cambridge	37.5	40.4	32.4	37.7
Cascade 1NW	28.6	30.3	23.1	26.7
Castleford 2N	40.6	42.5	36.4	40.4
Challis	34.7	37.1	30.7	34.4
Chilly Barton Flat	29.9	32.9	25.2	30.3
Coeur d'Alene 1E	32.5	34.4	24.6	29.8
Cottonwood	31.1	33.5	22.2	28.1
Council	37.5	39.5	30.4	35.8
Deer Flat Dam	40.8	42.4	37.2	40.5
Driggs	28.3	30.0	22.3	27.1
Dubois Exp. Sta.	30.5	32.8	25.2	30.1
Emmett 2E	40.7	43.2	36.7	41.1
Fairfield Ranger Sta.	29.4	31.0	26.3	29.9
Fort Hall	38.2	40.4	33.3	37.8
Garden Valley RS	35.3	37.3	29.2	33.9
Glenns Ferry	38.4	40.9	35.6	39.0
Grace	34.8	37.3	28.0	33.2
Grandview 2W	40.2	42.8	37.5	42.0
Grangeville	30.5	33.0	20.1	27.1
Hailey Ranger Sta.	29.0	31.1	25.6	30.1
Hamer 4NW	34.1	35.9	29.9	33.5
Hazelton	38.7	41.9	35.1	39.5
Hill City	28.8	30.7	26.1	29.7
Hollister	35.6	38.5	31.3	36.2
Howe	34.3	36.6	29.6	33.9
Idaho City	30.2	32.4	25.6	30.8
Idaho Falls 2ESE	36.8	39.0	31.6	36.0

1 acre x

TABLE A cont.

Station	Mean CU	80th PCTL. CU	Mean CIR	80th PCTL. CIR
Idaho Falls 16SE	33.7	35.5	26.9	30.9
Idaho Falls FAA AP	35.7	38.1	31.2	35.5
Idaho Falls 46W	32.8	35.0	28.6	32.8
Island Park Dam	24.8	26.5	18.1	24.9
Jerome	39.5	41.9	36.2	40.2
Kellogg	32.1	34.1	22.5	28.1
Kilgore	24.5	25.6	17.8	23.3
Kooskia	35.2	37.3	23.3	29.5
Kuna 2NNE	41.7	44.4	37.2	41.4
Lewiston WSO AP	37.3	39.6	30.9	35.3
Lifton Pumping Station	27.5	29.0	23.9	27.4
Mackay RS	33.7	36.3	29.1	33.6
Malad	35.4	37.8	29.2	34.5
Malad City	34.4	36.5	28.5	33.6
Malta 2E	36.4	37.9	30.9	35.0
May	28.9	31.1	24.8	28.0
McCall	27.8	29.9	21.1	25.6
Minidoka Dam	38.5	40.6	34.6	39.1
Montpelier	26.6	28.7	22.4	26.2
Moscow - U of I	33.7	36.0	25.0	30.2
Mountain Home	38.0	40.3	34.6	38.8
New Meadows RS	28.6	30.1	22.6	26.9
Nez Perce	30.6	32.3	21.1	25.3
Oakley	36.4	38.7	30.9	35.6
Ola 4S	36.5	38.3	30.9	35.1
Orofino	37.6	39.8	27.5	32.4
Palisades Dam	33.5	35.6	25.0	29.4
Parma Exp. Sta.	40.4	43.0	36.7	41.6
Paul 1ENE	38.0	40.6	34.0	38.4
Payette	41.0	43.0	37.4	40.9
Picabo	29.9	31.9	26.8	31.2
Pocatello WSO AP	37.0	39.3	32.4	36.9
Porthill	30.2	31.7	23.1	27.8
Potlatch	32.4	35.6	23.2	28.1
Preston	34.7	37.1	27.8	33.2
Reynolds	30.0	31.7	26.2	29.7
Richfield	37.0	39.3	33.7	37.9
Riggins	39.1	41.4	30.4	35.3
Rupert	38.8	41.5	35.7	39.3
St. Anthony 1WNW	29.6	31.4	25.2	28.3
Saint Maries	32.5	34.7	22.5	28.0
Salmon	32.2	33.9	27.2	30.6
Sandpoint Exp. Sta.	30.3	32.1	21.0	26.0
Shoshone 1WNW	39.1	42.0	35.9	40.3
Stanley *	22.7	23.6	18.8	21.9
Strevell	32.8	35.4	27.6	32.7

* Values are for irrigated pasture, not alfalfa hay

TABLE A cont.

Station	Mean CU	80th PCTL. CU	Mean CIR	80th PCTL. CIR
Swan Falls	42.3	44.4	38.9	42.5
Swan Valley	32.2	33.8	23.9	28.0
Tensed	31.1	32.7	22.4	27.0
Tetonia Exp. Sta.	28.2	29.8	22.3	26.9
Three Creek	26.5	28.3	22.5	26.6
Twin Falls 2NNE	39.1	41.4	35.6	39.8
Twin Falls 3SE	39.2	41.6	35.6	40.1
Weiser	39.2	41.7	35.8	39.9

ADMINISTRATOR'S MEMORANDUM

TO: Regional Offices and Water Allocation Section

FROM: Norman C. Young NCY

Transfer Processing No. 7

DATE: September 24, 1982

RE: Sample Calculations for Change in Nature of Use.

The intent of these sample calculations is to provide general guidelines for regional and state office staffs for quantitative evaluation of requested changes in nature of use. To comply with the intent of Section 42-222, Idaho Code, Department personnel must insure that a transfer of a water right does not result in an expansion of use.

An expansion could occur if any one of the following three parameters is increased under the new use: (1) rate of flow, (2) volume or (3) consumptive use. Each of the three parameters must be computed and checked since depending on the specific situation any one of the parameters might be "controlling". The "controlling" parameter determines how much water may be transferred without injury to other rights. The sample situation below demonstrates that depending on the situation any one of the three parameters can be "controlling".

The methodology shown makes many assumptions, and is intended to be used when the portion of the water right to be changed was previously applied to 640 acres or less. For larger acreages the applicant will be required to provide an evaluation by a qualified professional. Note also that the methodology does not take into account possible injury due to change in season of use. This factor must be evaluated on a case by case basis.

Sample Situation:
A wateruser desires to change the nature of use of part of a water right from irrigation to industrial for use in an ethanol production plant. The water is currently licensed for irrigation near Mackay. The water user desires to maintain irrigation with any water not needed for industrial use. The rates of flow needed for the industrial use are 0.10 cfs for washing machinery and 0.20 cfs for the mash. The total is 0.30 cfs, since occassionally both rates of flow must be satisfied simultaneously. Assume a seven day per week operation. The volume needed for the industrial use is computed as follows:

Volume: Washing: $.10 \text{ cfs} \times \frac{1.98 \text{ AF}}{\text{CFS DAY}} \times \frac{4 \text{ HRS.}}{\text{DAY}} \times \frac{1 \text{ DAY}}{24 \text{ HRS.}} \times \frac{365 \text{ DAYS}}{\text{YEAR}} = \frac{12.0 \text{ AF}}{\text{YEAR}}$

Mash: $.20 \text{ CFS} \times \frac{1.98 \text{ AF}}{\text{CFS DAY}} \times \frac{6 \text{ HRS.}}{\text{DAY}} \times \frac{1 \text{ DAY}}{24 \text{ HRS.}} \times \frac{365 \text{ DAYS}}{\text{YEAR}} = \frac{36.1 \text{ AF}}{\text{YEAR}}$

Total: $12.0 + 36.1 = 48.1 \frac{\text{AF}}{\text{YEAR}}$

The consumptive use for the industrial purposes is computed as follows:

Consumptive Use:

Washing: 1.2 AF/YEAR (assume that 10% is consumptively used)
Mash: 36.1 AF/YEAR (assume that all is consumptively used)
Total: 37.3 AF/YEAR

Case 1: Rate of Flow Controlling

Given:
- Irrigation right is licensed at 0.80 cfs for 80 acres.
- Volume diverted for irrigation purposes is 3.5 AF/acre (From Water User's Handbook, IDWR p. 11. This assumes alfalfa* and 60% irrigation efficiency.)
- Number of days in the irrigation season is 215. (From Water User's Handbook, IDWR, p. 17.)
- Irrigation consumptive use is 16.3 inches = 1.4 AF/acre (From Sutter, R. J. and G. L. Corey, "Consumptive Irrigation Requirements of Crops in Idaho", University of Idaho Bulletin 516, July 1970 Table 6, page 8, copy attached. This is the average seasonal consumptive irrigation requirement for alfalfa near Mackay. Note that the attached map of Idaho shows the climatic areas.

Find: Rate of flow, volume and consumptive use for irrigation use and industrial use after change.

Analysis:
- Total rate 0.80 cfs
- Total volume diverted 3.5 (80) = 280 AF/YEAR
- Total consumptive use (C. U.) 1.4 (80) = 112 AF/YEAR

Solution: a. New use check

RATE	VOLUME	C. U.
0.80 cfs	280.0 AF	112.0 AF
-0.30 cfs	-48.1 AF	-37.3 AF
0.50 cfs	231.9 AF	74.7 AF

All values are positive. Therefore, the original right is large enough to provide for the new use.

b. Number of acres calculation.

1. Rate parameter check

$$\frac{0.30}{0.80}\ (80) = 30 \text{ acres out}$$

2. Volume parameter check

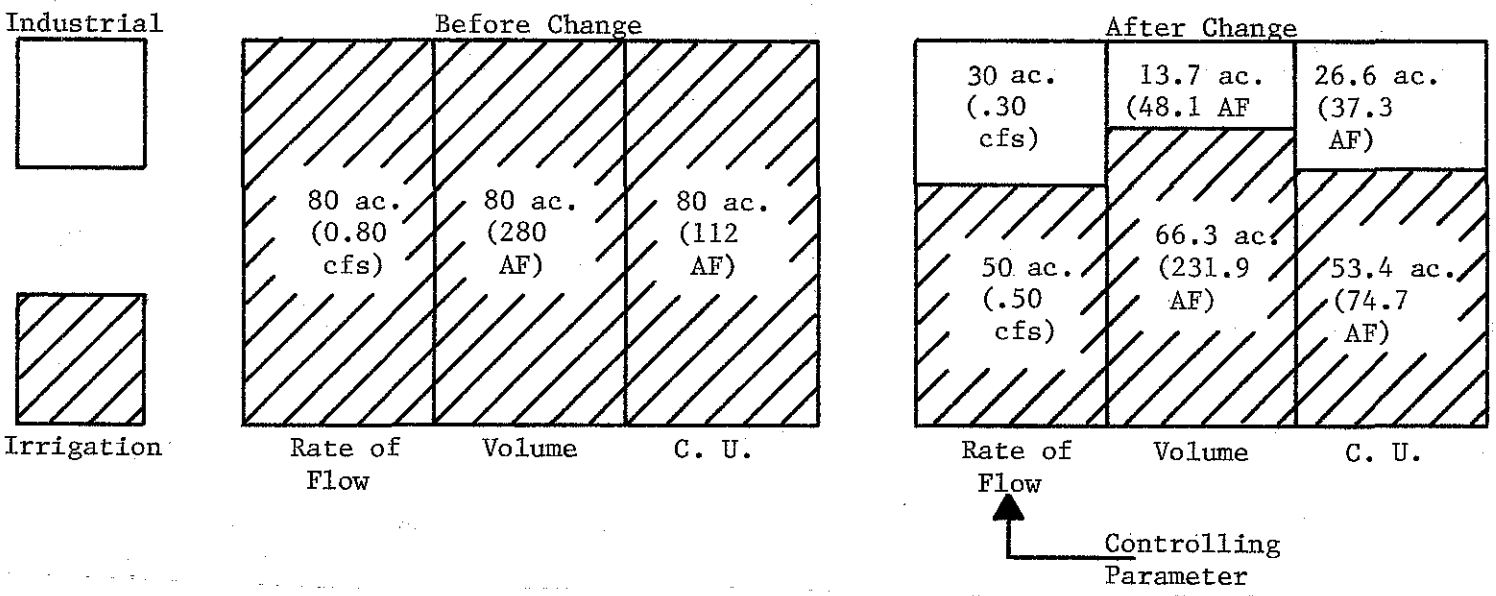
$$\frac{48.1}{3.5} = 13.7 \text{ acres out}$$

3. C. U. parameter check

$$\frac{37.3}{1.4} = 26.6 \text{ acres out}$$

*An "alfalfa standard" will be used for any consumptive use computation for irrigation. This means that regardless of the historical crop uses, the crop used in the water requirement computations is alfalfa.

c. Graphical representation of the solution:



d. Evaluation of water right after the change. As demonstrated above, the original irrigation right is large enough to provide for the requirements of the industrial use and to provide for continued irrigation of a portion of the lands. The computation of the number of acres that can be irrigated after the change is based on maximum utilization of remaining water supplies. In this case, the rate of flow appears to limit the irrigated acreage to 50 acres, so rate of flow appears to be the "controlling" parameter.

However, when rate of flow is initially found to be "controlling" one further check should be made. If the remaining irrigation rate of flow (0.50 cfs) can provide enough water to irrigate more than the proportionate number of acres (50), then the acreage irrigated for the rate of flow parameter can be increased.

Generally, the minimum rate of flow per acre is based on the maximum irrigation demand. Since the demand is based on a number of factors including soil type, soil depth and irrigation system in addition to the factors already mentioned, this computation must be made by a qualified irrigation expert (e.g. Verl King). After the maximum number of acres is found for rate of flow when it is the controlling factor the other parameters should be checked to make sure they are not exceeded by the new maximum.

As an example, assume that the maximum number of acres that can be irrigated by 0.50 cfs is computed by an expert to be 52.0 acres. Then the right after the change would be as follows:

Right after change

USE	ACRES	RATE	VOLUME	C. U.
Irr.	52	0.50	52 X 3.5 = 182	52 X 1.4 = 72.8
Ind.	N.A.	0.30	48.1	37.3
		0.80 cfs	230.1 AF	110.1 AF

Case 2: Volume Controlling

- Irrigation right is licensed at 0.80 cfs for 80 acres.
- Volume diverted for irrigation purposes is 3.5 AF/ acre.
- Consumptive use for irrigation is 1.4 AF/acre.
- Water used to wash machinery is used 24 hours/day and only 1.67% is consumptively used.

Find: Rate of flow, volume and consumptive use for irrigation and industrial use after change.

Analysis:
- Total rate 0.80 cfs
- Total volume 3.5 (80) = 280 AF/YEAR
- Total C. U. 1.4 (80) = 112 AF/YEAR
- Volume for industrial use recalculated as follows:

Washing: $.10 \text{ cfs} \times 1.98 \frac{\text{AF}}{\text{cfs DAY}} \times \frac{24 \text{ HRS.}}{\text{DAY}} \times \frac{1 \text{ DAY}}{24 \text{ HRS.}} \times$

$$\frac{365 \text{ DAYS}}{\text{YEAR}} = 72.3 \frac{\text{AF}}{\text{YR.}}$$

Mash: No change (36.1 AF/YEAR)

Total Vol. = 72.3 + 36.1 = 108.4 AF/YEAR

- C. U. for industrial use recalculated as follows:

Washing: 1.67% of 72.3 = 1.2 AF/YEAR
Mash: 36.1 AF/YEAR
Total C. U.: 1.2 + 36.1 = 37.3 AF/YEAR (no change)

Solution: a. New use check

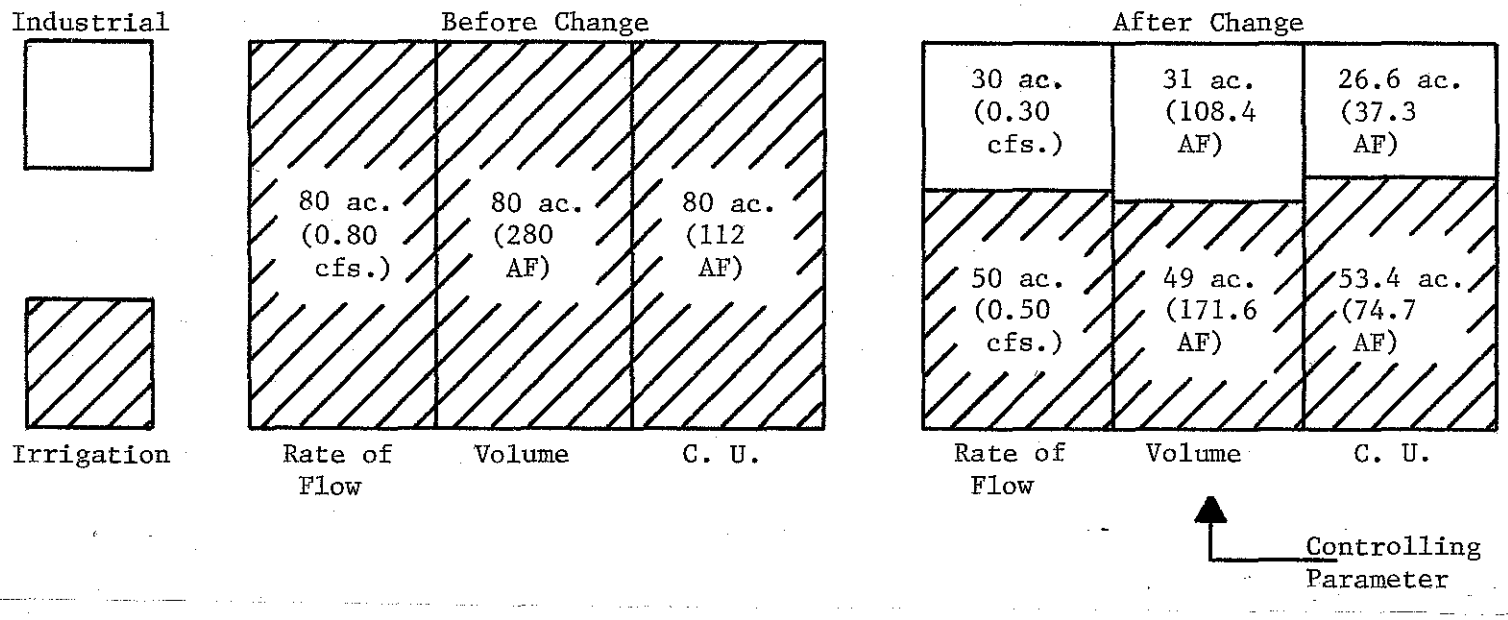
RATE	VOLUME	C. U.
0.80	280.0	112.0
-0.30	-108.4	-37.3
0.50 cfs	171.6 AF	74.7 AF

All values are positive. Therefore, the original right is large enough to provide for the new use.

b. Number of acres calculation.

1. Rate parameter check
   $\frac{0.30}{0.80}$ (80) = 30 acres out
2. Volume parameter check
   $\frac{108.4}{3.5}$ = 31 acres out
3. C. U. parameter check
   $\frac{37.3}{1.4}$ = 26.6 acres out

c. Graphical Solution



d. Evaluation of water right after the change. As shown in the graphical solution, volume is the "controlling" parameter, which limits irrigation after the change to 49 acres.

Right after change

USE	ACRES	RATE	VOLUME	C. U.
Irr.	49	0.50	171.6	49 (1.4) = 68.6
Ind.	N.A.	0.30	108.4	37.3
		0.80 cfs	280.0 AF	105.9

Case 3: Consumptive Use Controlling

Given:
- Irrigation right is licensed for 1.60 cfs for 80 acres.
- Volume diverted for irrigation purposes is 3.5 AFA/acre.
- Consumptive use for irrigation is 1.4 AF/acre.

Find: Rate of flow, volume and consumptive use for irrigation use and industrial use after change.

Analysis:
Total rate 1.60 cfs
Total volume 3.5 (80) = 280 AF/YR.
Total C. U. 1.4 (80) = 112 AF/YR.
Volume for industrial use = 48.1 AF/YR.
C. U. for industrial use = 37.3 AF/YR.

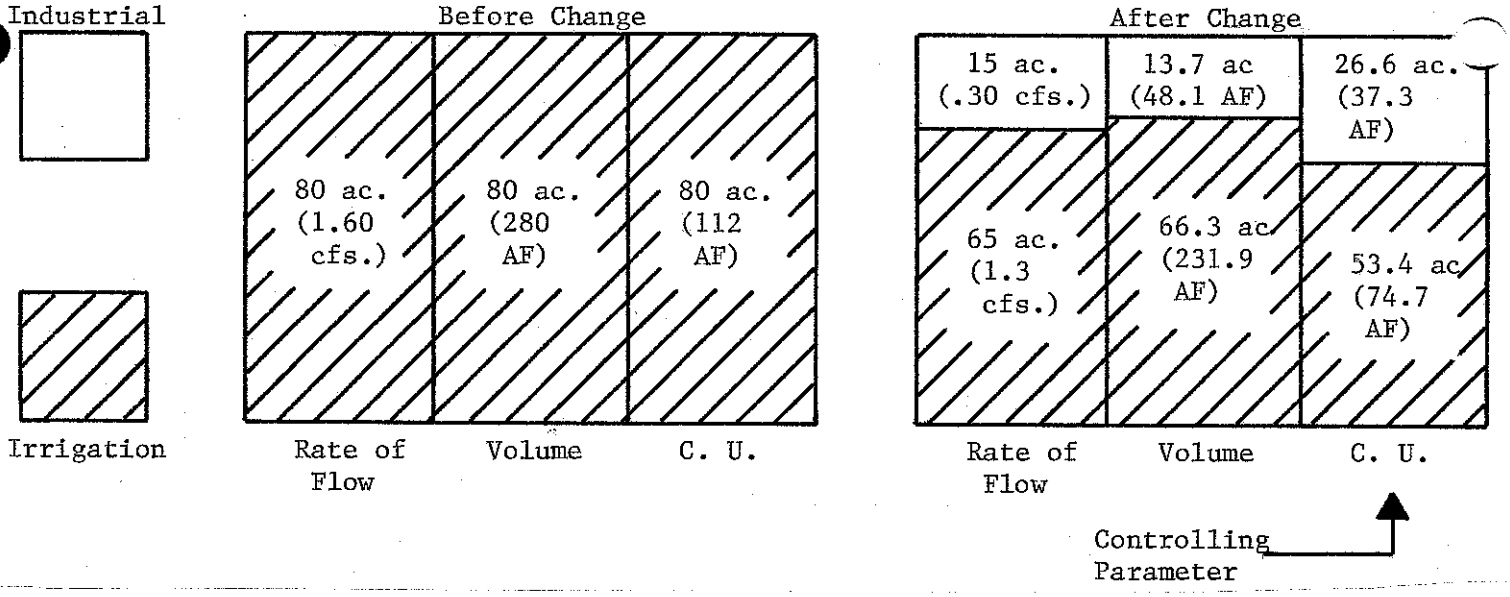
Solution: a. New use check

RATE	VOLUME	C. U.
1.60	280.0	112.0
-0.30	48.1	-37.3
1.3 cfs	231.9 AF	74.7 AF

All values are positive. Therefore, the origianl right is large enough to provide for the new use.

b. Number of acres calculation.

1. Rate parameter check
   $\frac{0.30}{1.60}$ (80) = 15 acres out
2. Volume parameter check
   $\frac{48.1}{3.5}$ = 13.7 acres out
3. C. U. parameter check
   $\frac{37.3}{1.4}$ = 26.6 acres out



d. Evaluation of water right after the change. As shown in the graphical solution, consumptive use is the "controlling" parameter, which limits irrigation after the change to 53.4 acres.

Right after change

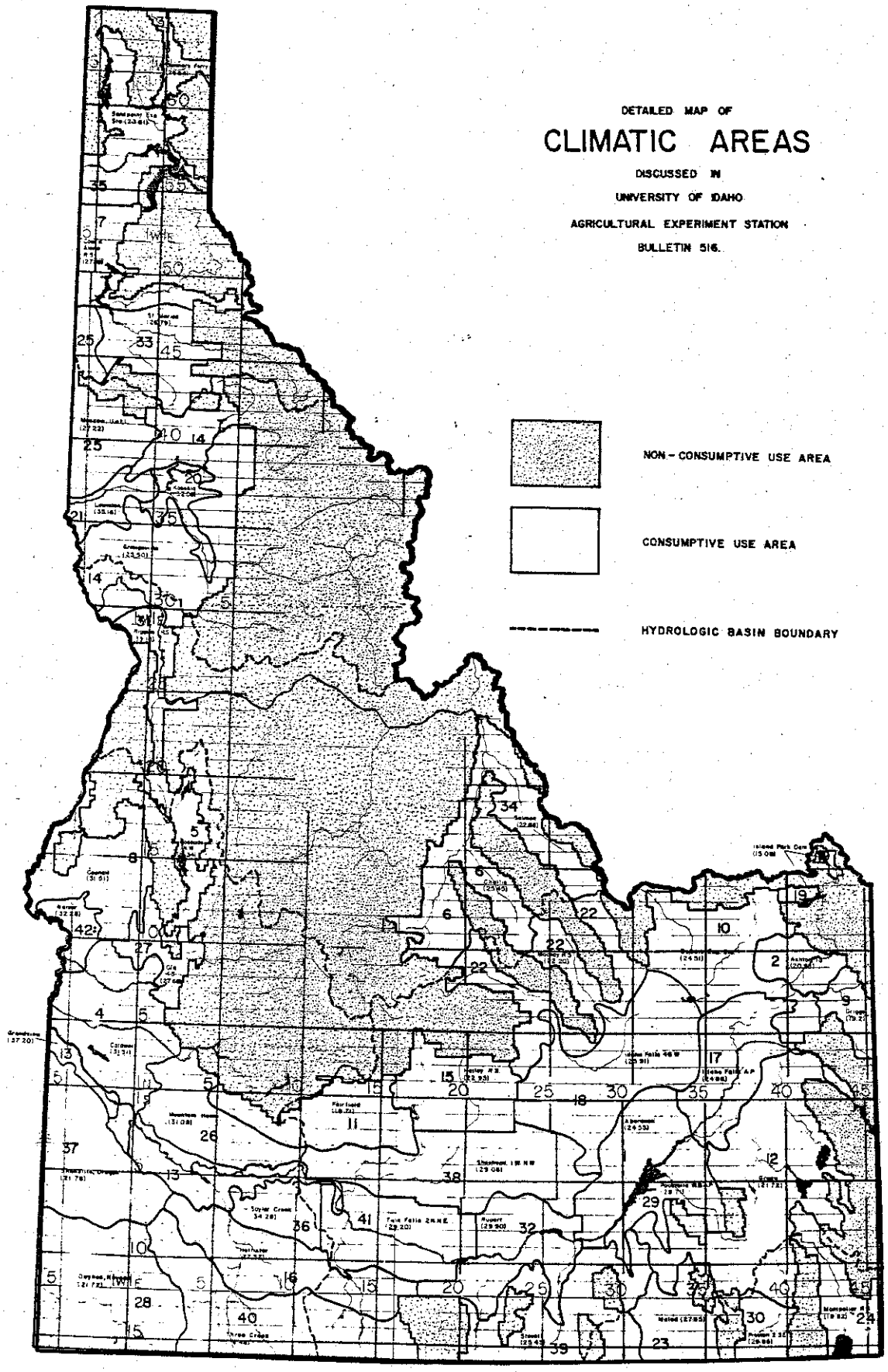
USE	ACRES	RATE	VOLUME	C. U.
Irr.	53.4	1.3	53.4 (3.5) = 186.9	74.7
Ind.	N.A.	.3	48.1	37.3
		1.6	235.0 AF	112.0 AF

When the supplemental information sheet for change in nature of use is received by the regional office, the computations of the three parameters should be completed and placed in the file. These computations will be reviewed by state office personnel during the review process.

REPLACED by Table A in attached amendment.

Table 6. Average annual consumptive irrigation requirement by crop for Idaho (inches).

Area	Station	Sugar beets	Dry beans	Corn silage	Field corn	Spring grain	Potatoes	Small veg.	Winter grain	Alfalfa	Pasture	Orchards
1.	Aberdeen	18.1	14.0	14.4	15.5	13.5	17.7	9.5	18.4	19.6	15.7	-----
2.	Ashton 1S	12.1	-----	9.6	-----	10.0	12.3	-----	13.7	13.5	10.1	-----
3.	Bonners Ferry 1SW	-----	-----	11.8	-----	13.0	15.1	-----	15.1	16.7	12.0	-----
4.	Caldwell	24.4	16.9	18.8	19.8	13.7	23.4	10.7	19.9	26.1	20.3	21.4
5.	Cascade 1NW	-----	-----	9.9	-----	10.3	11.4	-----	13.8	13.7	10.3	-----
6.	Challis	-----	-----	13.6	-----	15.2	15.3	-----	16.3	19.3	14.7	-----
7.	Coeur d'Alene RS	-----	-----	13.5	-----	13.9	17.2	-----	16.1	19.1	13.5	-----
8.	Council	20.4	-----	16.2	-----	13.4	20.3	-----	17.1	22.5	16.5	-----
9.	Driggs	-----	-----	9.4	-----	9.2	11.5	-----	13.5	12.7	9.5	-----
10.	Dubois Exp. Sta.	16.5	-----	12.4	-----	12.6	16.1	-----	16.0	17.5	13.5	-----
11.	Fairfield	-----	-----	11.9	-----	12.3	14.4	-----	15.6	15.6	12.1	-----
12.	Grace	12.8	-----	10.2	-----	10.5	12.4	-----	14.2	14.4	10.6	-----
13.	Grandview	18.7	18.8	22.6	22.9	16.2	26.9	13.0	21.1	31.6	24.2	26.1
14.	Grangeville	-----	-----	9.5	-----	6.4	12.7	-----	11.5	14.1	8.5	-----
15.	Hailey RS	-----	-----	12.7	-----	13.1	14.9	-----	16.3	17.5	13.7	-----
16.	Hollister	18.5	13.3	14.0	15.2	11.8	18.3	8.1	17.1	20.4	15.2	-----
17.	Idaho Falls AP	18.6	-----	13.9	-----	12.9	17.9	-----	17.1	19.4	15.5	-----
18.	Idaho Falls 46W	15.6	-----	12.9	-----	13.5	16.6	-----	16.2	17.3	13.5	-----
19.	Island Park Dam	-----	-----	5.6	-----	4.6	7.0	-----	9.3	8.2	5.7	-----
20.	Kooskia	-----	-----	13.4	-----	11.0	17.4	-----	14.6	19.2	12.0	-----
21.	Lewiston	-----	-----	18.2	-----	14.8	21.4	5.1	14.4	25.8	18.2	20.7
22.	Mackay RS	-----	-----	11.5	-----	13.3	13.2	-----	15.7	16.3	12.8	-----
23.	Malad	19.1	-----	14.8	-----	15.0	18.4	-----	16.6	20.8	15.5	-----
24.	Montpelier RS	-----	-----	10.8	-----	11.1	13.3	-----	15.1	14.5	11.2	-----
25.	Moscow U of I	-----	-----	12.8	-----	11.0	16.2	7.7	15.0	18.2	12.6	-----
26.	Mountain Home	25.1	17.0	19.1	20.7	16.6	24.1	11.9	21.5	26.7	21.1	22.1
27.	Ola 4S	18.9	-----	15.1	-----	10.0	19.4	7.6	17.6	21.2	15.7	17.1
28.	Owyhee, Nevada	-----	-----	12.6	-----	13.0	15.5	-----	16.5	17.3	13.1	-----
29.	Pocatello WB AP	21.3	14.3	16.2	-----	12.8	20.2	9.6	17.3	22.6	17.5	-----
30.	Preston 2SE	18.3	-----	14.3	-----	14.8	18.0	-----	16.8	20.1	14.8	-----
31.	Riggins RS	-----	-----	18.5	-----	14.6	22.2	-----	14.6	26.5	17.2	-----
32.	Rupert	23.3	16.2	18.1	19.2	12.7	21.9	10.2	19.1	24.9	19.5	20.5
33.	St. Maries	-----	-----	12.8	-----	13.1	16.0	8.4	15.9	17.9	12.8	-----
34.	Salmon	-----	-----	12.2	-----	13.0	16.5	-----	16.4	17.0	13.3	-----
35.	Sandpoint Exp. Sta.	-----	-----	10.2	-----	11.6	13.4	-----	14.4	14.6	10.2	-----
36.	Saylor Creek	26.9	17.5	20.5	21.9	17.8	25.3	12.1	19.3	28.7	22.2	23.7
37.	Sheaville, Oregon	-----	-----	13.9	-----	13.7	17.0	-----	17.5	18.0	14.3	-----
38.	Shoshone 1WNW	21.9	16.1	17.2	17.8	12.8	21.6	10.2	20.6	23.6	18.8	-----
39.	Strevell	16.2	-----	13.0	-----	13.5	16.6	-----	16.5	18.0	13.6	-----
40.	Three Creek	-----	-----	7.5	-----	7.5	11.5	-----	12.1	11.3	8.7	-----
41.	Twin Falls 2NNE	21.9	15.6	16.8	17.4	13.2	21.3	9.7	19.2	23.2	18.3	18.9
42.	Weiser	25.6	17.9	19.3	21.2	14.5	23.7	7.3	21.4	26.8	21.2	22.0
	State Average	20.0	16.1	13.9	19.2	12.6	17.3	9.4	16.3	19.3	14.5	21.4



NOTE: Figure in Parenthesis is 80 Percentile Seasonal Alfalfa Consumptive Use From U of I Bulletin 516

Supplement to
Form No. 222
2/82

Transfer No._____

Water Right No._____

STATE OF IDAHO

DEPARTMENT OF WATER RESOURCES

Application For Transfer of Water Right
Supplemental Information for
CHANGE IN NATURE OF USE

1. Fully complete Form 222. Type or print in ink "CHANGE IN NATURE OF USE" at the top of page 1. If no change in point of diversion or place of use is desired, so note under items C.2 and/or C.3 C.

2. Describe fully the new use to which the water is intended to be applied:

a. Nature of use:_____

b. Rate of flow:_____

c. Hours per day and days per year that the flow will be diverted:_____

d. Season of use:_____

e. Return flows from the use: (quantity and quality of return flows, and location of discharge):

3. Describe positive and negative effects on other waterusers predicted to result from the proposed change in nature of use._____

State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

ADMINISTRATOR'S MEMORANDUM

TO: Resources Administration Division

FROM: Norman C. Young NCY

DATE: May 10, 1984

RE: Point of Diversion Description

Permit Processing No. 6
Transfer Processing No. 8

There has been considerable discussion concerning amendment or transfer requirements when a point of diversion location is changed, point or points of diversion are added or a replacement point of diversion is constructed.

The following will be the policy of the Department:

An amendment is needed to change the tract in which a point of diversion is to be constructed if different than the tract described on the permit. An amendment is also needed to add one or more points of diversion in the same tract described on a permit.

In the case of a claim, license, or decree, a transfer is needed to change the tract in which a point of diversion is located or to add a point of diversion even if the point of diversion to be added is in the original tract described on the license or decree. A transfer is not needed to replace a point of diversion in the original tract if the original point of diversion will be abandoned.

State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

ADMINISTRATOR'S MEMORANDUM

Transfer Processing No. 9

TO: Regional Offices and Water Allocation Section

FROM: Norman C. Young NCY

DATE: August 7, 1984

RE: Transfer of a Decreed Water Right

Many decreed water rights in the state have poorly defined places of use. When an Application for Transfer proposes to change the place of use of such a decreed water right, the number of acres originally irrigated can be difficult to compute.

If the decree identifies a tract as a place of use rather than defining the number of acres within the tract, then the applicant must provide an aerial photograph from which the number of acres irrigated in each tract can be determined. The number of acres actually irrigated per tract should be shown in Part 1 of the transfer form, rather than merely indicating the tract. If the applicant contends that more acres were originally irrigated than are found to be irrigated on the photo, the difference should be documented by the applicant. If the acreage irrigated cannot be determined from the aerial photo, a field examination to make the determination is required.

State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

ADMINISTRATOR'S MEMORANDUM

Transfer Processing No. 10

TO: Regional Offices and Water Allocation Section

FROM: Norman C. Young NCY

DATE: January 24, 1986

RE: Transfer of Water Rights from Encumbered Lands

Increasing scarcity of water supplies has resulted in an increase in the number of Applications for Transfer proposing to move water rights from one location to another. A previous memorandum described the importance of insuring that a transfer will not allow an expansion of a water right. An additional concern regards encumbrances on land from which a water right is proposed to be removed.

Item C(3)(a) of the Application for Transfer reads as follows:

> Are the lands from which you propose to transfer the water right subject to any liens, deeds of trust, mortgages or contracts? _____YES _____NO.
> If yes, provide a notarized statement from the holder of the lien, deed of trust, mortgage or contract agreeing to the proposed change.

This question must be answered on every Application for Transfer, even when the applicant is the same as the original right holder, before the application is forwarded to the state office. If the answer is no, then no resulting action need be taken by the Department. If the answer is yes, then the regional office personnel must require the applicant to provide the notarized statement from the holder of the lien, deed of trust, mortgage or contract to the regional office before the Application for Transfer is forwarded to the state office. The format of the notarized statement is not standardized, and it can be a notarized letter, memorandum, etc.

The requirement for the notarized statement is important in that it is the only practical means of insuring that the encumbrance holder will be notified of the pending removal of water rights. In the case where an incorrect response by the applicant to question C(3)(a) injures an encumbrance holder, the Transfer can be voided if the original filing information is found to be fraudulent or faulty.

State of Idaho
DEPARTMENT OF WATER RESOURCES
1301 North Orchard Street, Statehouse Mail, Boise, Idaho 83720 - (208) 334-7900

CECIL D. ANDRUS
GOVERNOR
R. KEITH HIGGINSON
DIRECTOR

ADMINISTRATOR'S MEMORANDUM

To: Water Management Division

From: Norman C. Young NCY

RE: LEGAL ADVERTISEMENTS

Date: January 30, 1989

Application Processing No. 44
Permit Processing No. 13
Transfer Processing No. 11
Claim Processing No. 3

Attached is a copy of Section 60-113, Idaho Code, which is self-explanatory.

In order to comply with the code section, the department should prepare its legal notices in compliance with paragraph (b) of the section. We can simply add a statement to our legal notice which states something like "For additional information concerning the property location, call _____ Regional Office at _____(phone number)".

This change in our advertising procedure should be relatively easy to implement and should satisfy the requirements of Section 60-113, Idaho Code.

The recommended change has been selected since, most of the legal descriptions which appear in the notices prepared by the department do not have a related street address. In addition, most legal notices are prepared from the computer based data which can not readily accommodate the preparation of a legal notice which involves language such as "... which is located 2 miles West of the Mountain Home Air Force gunnery range and 5 miles south of the intersection of Simco Road and Interstate Highway 84".

ADMINISTRATOR'S MEMORANDUM

To: Water Management Division TRANSFERS MEMO #12

From: Norman C. Young *NCY* ADJUDICATION MEMO #20

RE: TRANSFERS BASED ON ADJUDICATION CLAIMS

Date: April 17, 1989

During the Regional manager's meeting held on February 16 and 17, 1989 in Boise, a lengthy discussion ensued relative to identification numbers assigned to Snake River adjudication claims based on prior decreed or licensed rights or portions thereof.

As a practical matter, it might not be possible to identify the specific portion of a decreed or licensed right being claimed during the short time available while taking a claim, but the claim should reference the "core" number of the original right as should the adjudication data base. The purpose of the references to the original right is for analysis purposes prior to submitting a director's report to the court by determining whether the parts of an original right claimed exceed the whole or whether certain parts of the original right have not been claimed.

The letter designation indicating the specific part of the original right claimed can be determined during the review of the claims in preparation of the Director's report or when a transfer is filed on a claim, whichever occurs first.

Some adjudication claims which are filed will claim the right or portion thereof in a manner different from the licensed or decreed right of record inferring that an unrecorded transfer has occured in the past. A transfer does not need to be filed to submit the adjudication claim in this manner, since Section 42-1416A, Idaho Code, has been enacted.

If, however, a transfer is filed on an adjudication claim which represents an unrecorded transfer, evidence of title to the original right or portion thereof claimed must be shown by the applicant before the transfer can be processed. In addition, the core water right number shown on the adjudication claim (either as the identification number or in remarks) must be further identified with an alpha suffix character if the unrecorded

transfer represents a division of an earlier recorded part of the original right. This is particularly important when a number which does not include the core number of the original licensed or decreed right has been assigned to an adjudication claim.

This identification process is necessary to prevent the state office from having to create and maintain additional files based on an assigned adjudication number which does not relate to the original right.

In no case should a transfer, as described above, be advertised showing an identification number which is not related to the original number assigned to the right.

ADMINISTRATOR'S MEMORANDUM

To: Department Staff

From: Norman C. Young NCY

Transfer Processing No. 13

RE: TRANSFERS OF WATER RIGHT - CONFIRMATION OF CHANGE

Date: October 9, 1990

Department records contain some discrepancies associated with water rights for which a transfer has been approved but for which the actual change authorized by the transfer has not actually been made.

To eliminate some of the uncertainties associated with transfers which are not effectuated, in recent years, the department has conditioned transfer approvals with the following language:

> "The use of water on lands to which the above referenced water right(s) were appurtenant is hereby abandoned and failure to put the water to beneficial use within five (5) years of the date of approval of this transfer on the new land identified under item B.5 shall constitute loss or forfeiture of the water right(s)".

While the above referenced condition was intended to prevent use of water on the land from which a right was transferred and suggests an ultimate disposition of the water right if the approved change is not made, the department has not had occasion to enforce the condition. A period of five (5) years or longer generally passes before the department usually determines an authorized change did not occur.

To improve the reliability of water right records, the department will condition future transfers with the following language:

> "The change authorized by this transfer shall be accomplished within one (1) year of the date of this approval."
>
> and
>
> "Failure to comply with the conditions of this transfer is cause for the director to issue an order to show cause why the approval of the transfer should not be rescinded."

The mechanics to determine whether the conditions of approval have been met will involve establishing a system where the department notifies the water right holder (owner) approximately a year after a transfer is approved that the owner needs to submit evidence to show that the authorized change has occurred. If the owner does not respond to the department or the department has reason to question the information submitted, the department will schedule and conduct a field examination.

MEMORANDUM

Transfer Processing No. 14

To: Regional Offices and Water Allocation Bureau

From: Norman C. Young NCY

RE: TRANSFER APPROVALS

Date: JANUARY 31, 1991

A regional office recently posed the question of whether the department approval of applications for transfer might preclude the opportunity for consideration of the validity of the water rights in the ongoing Snake River Basin Adjudication primarily under the legal principle of "res judicata".

In order to minimize the opportunity that users of this legal principle or similar principle can preclude the review of water rights for which transfers have recently been approved, the department will include the following condition among the usual conditions of approval on transfers in the Snake River drainage:

> "Approval of this transfer does not preclude the opportunity for review of the validity of the water right(s) in the ongoing Snake River Basin Adjudication".

ADMINISTRATOR'S MEMORANDUM

TO: WATER MANAGEMENT DIVISION STAFF

FROM: NORMAN C. YOUNG NCY

Transfer Processing No. 15
Adjudication Memo No. 33

DATE: JUNE 3, 1991

RE: TRANSFER APPLICATION PROCESSING & SRBA CLAIM AMENDMENTS

This memo provides direction for amending adjudication claims and filing transfer applications related to both statutory rights (decreed rights, licenses and statutory claims) and Snake River Basin Adjudication (SRBA) claims.

When a statutory right is changed by an approved transfer, the adjudication claim that has been filed on the same statutory right must be amended. Section 42-1409(4), Idaho Code states in part:

> "...with respect to any water right for which a change was approved by the director pursuant to sections 42-211 or 42-222, Idaho Code, after filing the notice of claim and prior to filing of the director's report, the claimant shall amend the notice of claim consistent with the determination of the director on the change."

Transfers involving both statutory rights and adjudication claims may fall within one of the following broad categories or scenarios:

1) Transfer filed for proposed change or changes made after commencement of adjudication and after filing of adjudication claim, where the adjudication claim matches the statutory right before making the change;

2) Transfer filed for a proposed change or changes made after the commencement of adjudication and after filing of adjudication claim, but the adjudication claim does not match the statutory right before making the change;

3) Transfer filed on an adjudication claim based on beneficial use (i.e.; there is no existing statutory right).

PROCESSING OF TRANSFER APPLICATIONS

In examples no. 1, a transfer application does not need to describe the adjudication claim. However, item A.1. of part 2 of the application should at least reference the adjudication claim number if one has been filed. **The regional office shall attach a copy of the appropriate adjudication claim proof report when forwarding the transfer application to the state office.** The remarks section of part 1 of the transfer application can be used to describe the relationship between the statutory right and adjudication claim.

In example no. 2, where the transfer proposes changes to a statutory right that is recorded differently by an adjudication claim, the transfer application should describe both the statutory right and the adjudication claim. The legal notice must also show the right as recorded by the original decreed/statutory right as well as recorded by the adjudication claim. An example of this advertising format is provided as attachment A. This procedure for filing and advertising transfers should also apply to those situations whereby the adjudication filing(s) claim an expansion of the statutory right based on one or more presumption clauses of Section 42-1416, Idaho Code. However, the Department will not

approve a transfer for the expanded portion of a right since Section 42-222, Idaho Code does not authorize the Department to approve changes which constitute an enlargement of the original right.

In example no. 3 above, where a change is proposed that is documented only by an adjudication claim, field examinations must be conducted by the regions to confirm the use claimed prior to making final recommendations and forwarding the transfer to the state office.

The Water Allocation Bureau shall forward a copy of each transfer within the SRBA to the Adjudication Bureau upon final approval or decision of the application.

ADJUDICATION CLAIM AMENDMENTS

In order to satisfy the requirements of Section 42-1409(4), Idaho Code and simplify the procedure for amending adjudication claims, each approved application for transfer will be treated as the Department's notice of an amendment to the adjudication claim. The Department therefore will not require transfer applicants to file separate adjudication claim amendments.

NOTICE OF PROPOSED CHANGE OF
WATER RIGHT NO. 37-0900

Notice is hereby given that John Doe of Somewhwere, ID has applied to the Department of Water Resources to change the following described water right(s) pursuant to section 42-222 of Idaho Code.

WATER RIGHT AS RECORDED
Water Right No. 37-0900
Basis of Right: Decree to J. Jones in case of Jones vs. Smith, dated 12/9/1910 in 1st District Court, Idaho County.
Source: Snake River tributary to Columbia River
Priority Date:
Amount of Water:
Use:
Points of Diversion: SWSW, S22, T1N, R23E
Place of Use: 160 acres in

WATER RIGHT CLAIMED IN SNAKE RIVER BASIN ADJUDICATION:
Water Right No. A37-0900
Name: A. Jackson
Basis of Right: Decreed Right 37-0900
Source: Snake River tributary to Columbia River
Priority Date:
Amount of Water:
Use:
Points of Diversion: SWSE, S22, T1N, R18E
Place of Use: 160 acres in NENE, NWNE, SWNE, NENW, S28, T1N, R18E.

WATER RIGHT NO. 37-0900 & ADJUDICATION CLAIM NO. A37-0900 TO BE CHANGED AS FOLLOWS:
Points of diversion: SWSE, SESE, S22, T1N R18E
Place of Use: 150 acres in NENE, NENW, S28 T1N R18E; SWSW, SESW, S22, T1N R18E.

ADMINISTRATOR'S MEMORANDUM

To: Water Management Division
Adjudication Bureau

Application Processing Memo #52
Licensing Memo #9
Transfer Processing Memo #16
Adjudication Memo #39

From: Norman C. Young NCY

Re: STANDARDS FOR IRRIGATION CONSUMPTIVE USE REQUIREMENTS, IRRIGATION FIELD HEADGATE REQUIREMENTS, AND IRRIGATION SEASON OF USE

Date: October 12, 1999

A new 1:1,000,000 scale map of the "Irrigation Season of Use" presents a new standard for use in water right adjudication and water right licenses, permits, and transfers. A reduced reproduction of the map is attached to this memo; the reduced reproduction is for illustrative purpose only. The official version of the map is in digital format and can be accessed by contacting the Adjudication Bureau. A full-size copy of the map is available in the SRBA map case.

The 1:1,000,000 scale map of the state of Idaho dated December 1991 and entitled "Consumptive Irrigation Requirement, Field Headgate Requirement and Season of Use" is still necessary for the Consumptive Irrigation and Field Headgate Requirements. A reduced reproduction of the map is also attached to this memo; the reduced reproduction is for illustrative purpose only. An official copy of the map is available in the SRBA map case.

The purpose of these maps is to provide consistent standards in a simple format. Further information concerning the foundation for these standards is available from Jeff Peppersack.

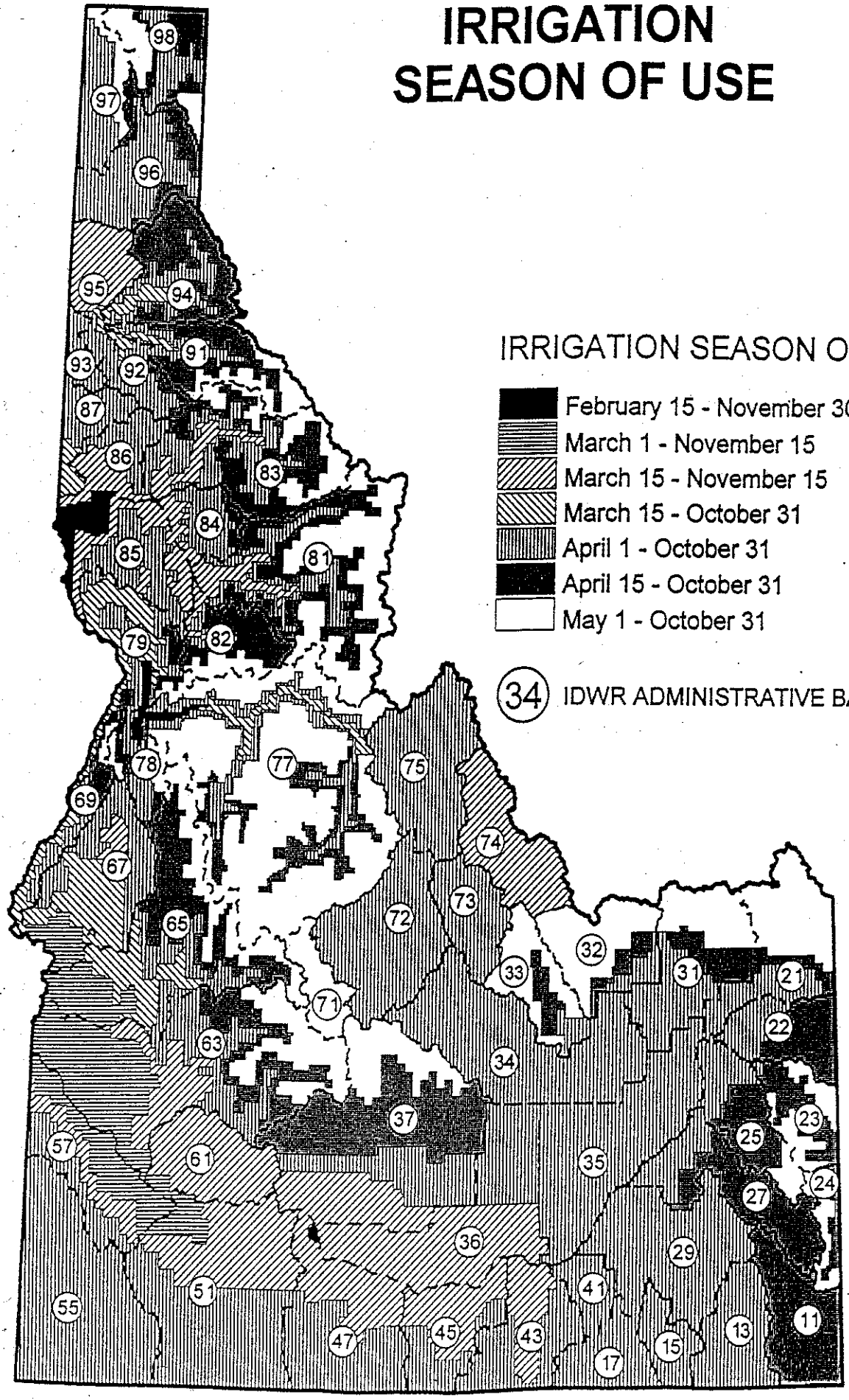
The standard season from the new map is to be used for a new permit regardless of the season stated on the application unless it can be shown to the satisfaction of the director that a different season of use is necessary. Likewise, the standard season from the new map is to be used for a new license regardless of the season stated on the permit unless it can be shown to the satisfaction of the director that a different season of use is necessary.

For a transfer of a license or decreed water right, the transfer approval should retain the licensed or decreed season. However, when the new standard season is longer than the licensed or decreed season, an approval condition like the following may be added:

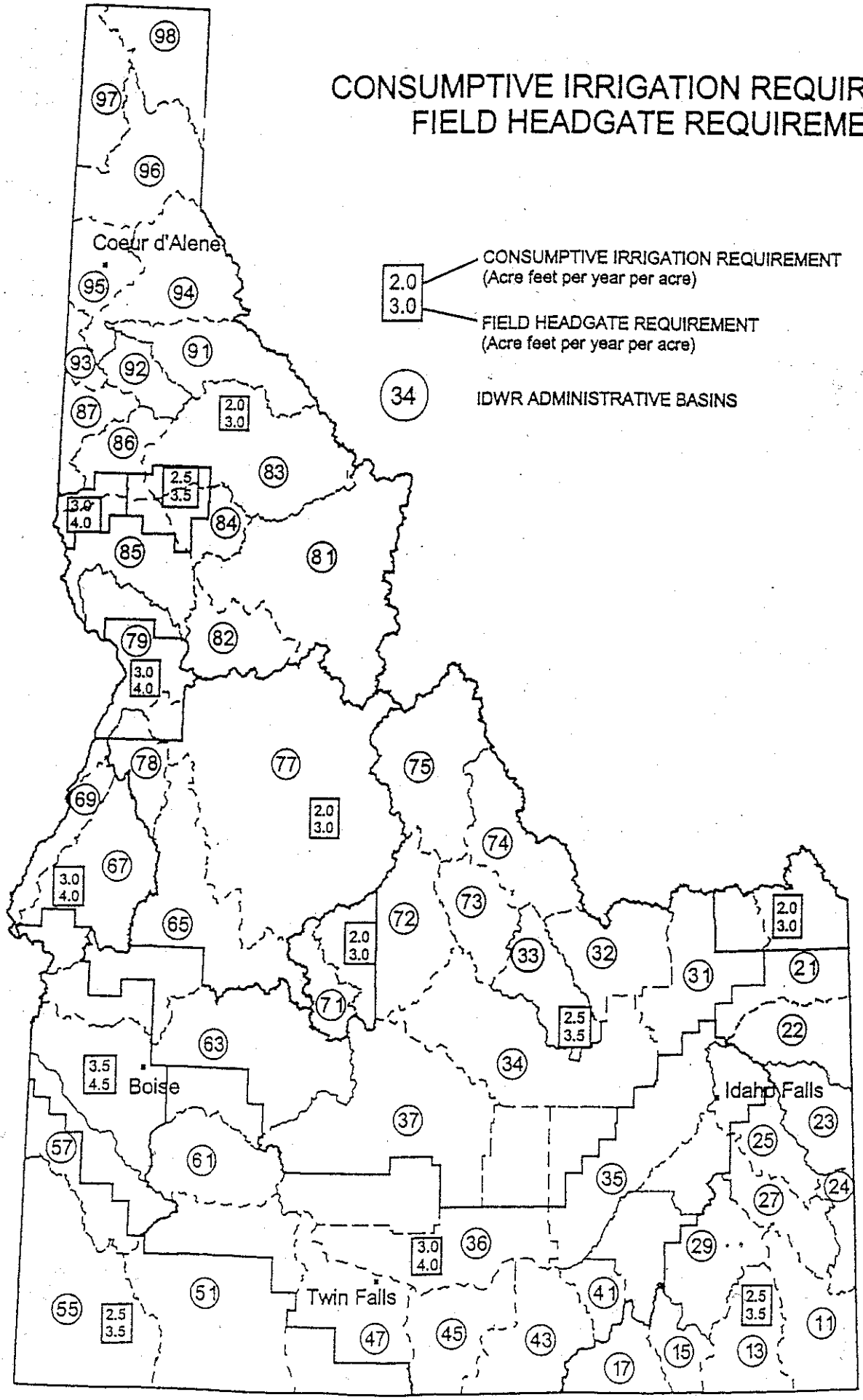
> The period of use for the irrigation described in this approval may be extended to a beginning date of *new standard* and an ending date of *new standard* provided that beneficial use of the water can be shown and other elements of the right are not exceeded. The use of water before *licensed or decreed date* and after *licensed or decreed date* is subordinate to all water rights having no subordinated early or late irrigation use and a priority date earlier than the date of this approval.

The standard season from the new map is to be used for recommendations in the SRBA as described in the Claim Investigation Handbook.

IRRIGATION SEASON OF USE



CONSUMPTIVE IRRIGATION REQUIREMENT, FIELD HEADGATE REQUIREMENT



MEMORANDUM

To: Water Management Division Staff

From: R. Keith Higginson, Director

Administrator's Memo
Transfer Processing No. 17

RE: IMPLEMENTATION OF HOUSE BILL NO. 4 - TEMPORARY CHANGE AUTHORITY FOR EXISTING WATER RIGHTS

Date: July 29, 1992

Attached is a copy of House Bill No. 4 passed by the First Extraordinary Session of the 1992 legislature to allow IDWR to respond to emergency drought related needs. The legislation was signed by the Governor and is effective immediately through November 1, 1992. The legislation allows expedited approval of changes to existing water rights without the need to provide public notice of the change. I anticipate that the authority will be used to authorize rotation between canals and perhaps to allow water rights now used on lower value crops to be switched for use on higher value crops and uses.

I want to emphasize to you that the new authority does **not** allow the expedited approval of applications to appropriate water for new or expanded uses or to transfer existing rights to such uses. It does **not** authorize the construction of new wells.

The authority to approve temporary changes in accordance with the provisions of House Bill No. 4 is hereby delegated to Norm Young, Glen Saxton, Gary Spackman, Loren Holmes, Dave Tuthill, Bob Haynes, and Ron Carlson. Applications may be approved when complete information on the proposed change is received on the Temporary Change Application form, the required fee of $50 per application is submitted and a brief review of the application indicates that the proposal meets the following requirements provided in House Bill No. 4:

1. The purpose of the change is to provide a replacement water supply to lands or for other uses which normally have a full water supply except for the drought condition. I understand this to mean that the lands intended to receive the transfered water have a water supply from surface and/or groundwater sources adequate to allow the usual irrigated crops for the area to be grown successfully during years of normal precipitation. A change that will improve the water supply to a use normally water short or that extends the season of use beyond that normally available should not be approved.

2. The change will not result in a new use of water or

expand an existing use. A change that will result in continued use of a water right which has been curtailed for the season because the crops have matured should not be approved.

3. The proposed change can be properly administered. Problems with administration can result if the change proposes a switch in water sources, changes in districts, or requires complex or rigid administrative conditions to allow delivery or accounting for delivery to prevent injury to other rights.

4. Information is not available to the department to indicate that the change will injure other rights.

5. If the water right to be changed is administered by a watermaster, the recommendation of the watermaster must be obtained. To expedite the processing, the watermaster comments should be obtained by telephone contact and recorded on the application form. If the watermaster recommends denial, the change should not be approved unless the concerns can be resolved with the watermaster.

The applicant should be the user of the water right sought under a Temporary Change Application.

A proposed change which involves unrelated water rights such as several different ground water rights being changed to a common place of use will require the filing of more than one change application.

Temporary change applications can be considered in connection with previously filed applications for transfer. In this case, a temporary change application must also be filed but the department will not require a separate filing fee. If a transfer has been protested, a change application can not be approved in lieu of completing the usual protest procedure.

Temporary Change Applications should be processed as follows:

1. Staff review to insure that the information provided adequately describes the change and that the proper fee is submitted. Correspond by telephone with the applicant if possible to resolve any problems or deficiencies with the application.

2. The Temporary Change Application should be identified as described below:

- Call the State Office for the next transfer number.

- On Part B of the Temporary Change Application, use an "X" prefix on the water right(s) identified for transfer:

i.e.

1. Right Number	Priority	Amount	Etc.
X63-02140	May 1, 1953	1.0 cfs	

- Fill out the rest of the application form as usual.

When the original Temporary Change Application form is received in the state office, the change information will be entered into the data base using the X prefix. An X will also be entered into the Stage of the changed water right. All other entry should follow existing data entry standards.

Data base search of approved temporary changes can be accomplished using WRS10 (enter X for Stage).

7/92

Ident. No._____

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

TEMPORARY CHANGE APPLICATION

(To change point of diversion, place of use or purpose of use)

Name of applicant _____ Phone _____

Post Office address _____

A. PURPOSE OF TRANSFER

1. ___ Change point of diversion ___ Add diversion point(s) ___ Change place of use
   ___ Change purpose of use ___ Other

2. Describe the proposed change(s) and the reason(s) therefor _____

B. DESCRIPTION OF RIGHT(S) OR PORTION THEREOF, AFTER THE REQUESTED CHANGE

1. Right Number | Priority | Amount | Nature | Period of Use

_____ _____ _____ _____ _____ to _____
_____ _____ _____ _____ _____ to _____
_____ _____ _____ _____ _____ to _____
_____ _____ _____ _____ _____ to _____

2. Total amount of water being transferred _____ cubic feet/second and/or _____ acre-feet per annum.

3. Source of water _____ tributary to _____

4. Point(s) of Diversion:

Ident No.	Gov't Lot	¼	¼	¼	Sec.	Twp.	Rge.	County	Local name for diversion

5. Lands irrigated or Place(s) of Use:

TWP	RGE	SEC	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	

Total acres _____

6. General Information:

a. Who owns the water right to be changed? _____

b. Describe the arrangement allowing use of the right _____

_____

c. Describe the affect on the land now irrigated if the change is approved pursuant to this application:

_____

_____

d. Has the water right sought to be transferred been used this year? _____ If yes, explain. _____

_____

e. Absent the changes, how would the right be used for the remainder of the year? _____

_____

f. Describe other water rights used for the same purpose.

_____

g. Remarks: _____

_____

_____

I hereby assume all risk in accordance with House Bill No. 4 and assert that no one will be injured by such change and that the change does not constitute an enlargement in use of the original right. The information contained in this application is true to the best of my knowledge. I understand that any willful misrepresentations made in this application may result in voiding its approval.

_____

(Signature of applicant)

_____ **FOR DEPARTMENT USE ONLY** _____

Received by _____ Date _____ Fee **$50**

Receipted _____ #_____ Recommend: _____ approve _____ deny

Watermaster recommendation _____

_____ ACTION OF THE DIRECTOR, DEPARTMENT OF WATER RESOURCES _____

This is to certify that I have examined Temporary Change Application No. _____

And said application is hereby _____, subject to the following limitations and conditions:

1. This approval expires November 1, 1992 and thereafter the right reverts to the use existing prior to the temporary change. _____

_____

_____

Witness my hand this _____ day of _____, 1992.

_____

RS01625C2

LEGISLATURE OF THE STATE OF IDAHO

Fifty-first Legislature First Extraordinary Session - 1992

IN THE HOUSE OF REPRESENTATIVES

HOUSE BILL NO. 4

BY WAYS AND MEANS COMMITTEE

AN ACT

RELATING TO THE DROUGHT CONDITIONS IN THE STATE OF IDAHO; DECLARING LEGISLATIVE INTENT TO PROVIDE EMERGENCY AUTHORITY TO THE DIRECTOR OF THE DEPARTMENT OF WATER RESOURCES, PROVIDING FOR TEMPORARY CHANGES IN THE POINT OF DIVERSION, PLACE AND PURPOSE OF USE OF WATER, AND SPECIFYING CONDITIONS; AND DECLARING AN EMERGENCY.

Be It Enacted by the Legislature of the State of Idaho:

SECTION 1. The legislature finds and declares that water conditions throughout the state of Idaho are extremely critical at the present time due to deficient precipitation during the winter and spring of 1991-1992 and similar below-average moisture received during the previous five seasons. As a result, the water supply available to Idaho's important agricultural industry and other water uses is inadequate to sustain normal operations. It is, therefore, necessary to provide emergency authority to permit temporary changes of point of diversion, place and purpose of use of valid existing water rights when the director of the department of water resources determines that such change(s) can be accomplished in accordance with the provisions of this section.

Application for a temporary change shall be made upon forms provided by the department of water resources and shall be subject to an application fee of fifty dollars ($50.00) per application.

No notice of the proposed change is required to be published pursuant to section 42-222(1), Idaho Code, and the director of the department of water resources is not required to make findings as provided in said section. A temporary change may be approved upon completion of the application form and payment of the filing fee and a determination by the director of the department of water resources that the proposed change can be properly administered and the director of the department of water resources has no information that the change will injure any other water right. If the water right to be changed is administered by a watermaster within a water district, the director of the department of water resources shall obtain the recommendations of the watermaster before approving the application.

All temporary changes approved pursuant to this act shall expire on November 1, 1992, and thereafter the water right shall revert to the point of diversion and place of use existing prior to the temporary change. Nothing herein shall be construed to permit a new well to be drilled as a new point of diversion.

The recipient of an approved temporary change issued pursuant to this act shall assume all risk that the diversion and use of the water may cause injury to other water rights, that the change constitutes an enlargement in use of the original right, that the use is not consistent with the conservation of Idaho's water resources and that such use is not in the local public interest. Any applicant for a temporary change who is aggrieved by the director of the department of water resources' denial of a temporary change pursuant to this

act is entitled to request a hearing and to obtain judicial review pursuant to section 42-1701A, Idaho Code.

Temporary changes shall only be approved for the purpose of providing a replacement water supply to lands or other uses which normally have a full water supply except for the drought condition. Temporary changes may not be approved for new uses or to allow expansion of the use of water under existing water rights.

SECTION 2. An emergency existing therefor, which emergency is hereby declared to exist, this act shall be in full force and effect on and after its passage and approval.

ADMINISTRATOR'S MEMORANDUM

Amended Transfer Processing No. 18

To: Water Allocation Bureau
Water Compliance Bureau
Regional Offices

From: Jeff Peppersack

Re: **IDAHO CODE § 42-222A - TEMPORARY CHANGES TO WATER RIGHTS DURING DROUGHT CONDITIONS**

Date: May 14, 2014

This memo supersedes all prior versions of guidance to staff regarding temporary changes to water rights during drought conditions, including Transfer Processing Memo No. 17.

Section 42-222A, Idaho Code, authorizes the Director upon declaration of a drought emergency to approve temporary exchanges and temporary transfers. The code section provides that temporary exchanges are to be approved as provided in Section 42-240, Idaho Code. Hence, the sources of water involved in temporary exchanges must be surface water, since the code section does not provide for the exchange of ground water with another source.

Declaration of a drought emergency is intended to encourage and facilitate changes to established water rights to help water users during a drought. To this end, IDWR will give positive consideration to applications with the intent of approving those that do not enlarge use of water under a right, do not injure other water rights, are consistent with the conservation of water resources and are in the public interest. Because of the emergency nature of these applications, the statute contemplates a truncated review by IDWR with more emphasis on the recommendation of the local watermaster and the responsibility of the applicant to meet the above described criteria.

- IDWR has prepared a separate form for temporary transfers (form no. 42-222A) but has not prepared a separate form for temporary exchanges. Until a temporary exchange form is developed, staff should use the existing form for exchanges of water, marking the application as "temporary" on the Application for Exchange of Water form.

- IDWR staff should be willing to informally review ideas for temporary changes with water users and watermasters prior to the actual filing of an

application and fee to avoid, if possible, having to deny Temporary Change Applications.

- The same general considerations apply to a temporary change approval for a transfer or exchange as to an approval under Section 42-222, Idaho Code, or Section 42-240, Idaho Code, respectively.

- A temporary change cannot result in a new use of water or an enlargement of water use under the rights. An equal amount of use needs to be given up, usually in terms of acreage that will not have a full water supply during the period of the temporary transfer.

- A temporary change shall not be used to authorize construction of a new well or wells.

- Department staff should carefully consider the unstacking of water rights. In general, unstacked water rights result in enlargement in use, since the unstacked rights would likely be used as primary rights with more volume of water being diverted under the rights in combination. Temporary transfers of supplemental rights should be evaluated similar to transfers under Section 42-222, Idaho Code, keeping in mind that temporary changes shall only be approved to lands or uses which normally have a full supply except for a drought condition.

- IDWR can approve a temporary change to allow water to be moved from one field (perhaps alfalfa or pasture) that may still need water to another crop (such as potatoes). For example: IDWR could approve a temporary change to allow water to be moved from a finished grain crop to a different crop that is short of water due to drought with no alternate supply assuming that the right would authorize continued irrigation on the grain field after the grain crop is harvested (e.g. to establish a second crop). In this example, an approval should be conditioned to be effective only after the grain crop is harvested because water would not otherwise be used on the grain field for a period of time until harvest. Temporary approval should not be given if use of the right will result in the use of more water under the water right than authorized by the right.

- IDWR will consider temporary changes to allow rotation of water among canals provided there is no injury to other water users. The code section provides that temporary changes shall only be approved to lands or uses which normally have a full supply except for a drought condition. Temporary changes shall not be approved as a means to offset or delay the use of available storage water.

- If there is a watermaster who administers the rights on a water source, comments of the watermaster must be obtained and considered before approving a temporary change. Comments may be solicited and received in writing, by email, or through a phone call to the watermaster if followed by a memo to the file documenting the conversation. Delays or non-response from

watermasters will result in delays in processing applications. The watermaster should be informed that a non-response will be considered by the Department to be the watermaster's recommendation not objecting to approval of the proposed temporary transfer.

- An applicant is required to obtain and provide a copy of the written approval of an irrigation district or corporation before the Department will approve a change to water use represented by shares of stock or when the right or irrigation works to be used to make the change are owned or managed by an irrigation district.

- The approval document for Temporary Change Applications should be prepared as an Order Authorizing Temporary Change, examples of which the State Office has provided in the past to the regional offices. The order should be conditioned to specifically identify the authorized change including disclaimer conditions and an expiration date.

- Regional Managers are authorized to approve Temporary Change Applications and should send a copy to the applicant, the watermaster, the water right file(s) and the State Office.

- When the State Office approves a Temporary Change Application, the State Office will send a copy to the applicant, to the watermaster, to the water right file(s) and to the Regional office.

- Numbers will be assigned to temporary changes through an Excel spreadsheet maintained by the State Office to catalog and keep track of temporary changes.

ADMINISTRATOR'S MEMORANDUM

Application Processing No. 64
Transfer Processing No. 19
Dam Safety Processing No. 2
SCA No. 13

To: Water Management Division

From: Norman C. Young NCY

RE: **REVIEW OF APPLICATIONS FOR PERMIT ON A STATE PROTECTED RIVER REACH OR WITHIN A MINIMUM STREAM FLOW REACH**

Date: August 16, 1999

The Water Resource Board has adopted Comprehensive State Water plans for certain drainages in Idaho to protect designated reaches of waterways and associated riparian buffers from activities that would degrade the aesthetics and recreational values of the reaches. In addition, minimum streamflows have been approved for approximately 70 stream reaches in Idaho.

In order to assure that various approvals for programs administered by Water Management Division do not conflict with protected rivers in an adopted Comprehensive State Water Plan (plan) or Minimum Stream Flow reach ("minimum flow reach"), staff is directed to seek and consider comment from Planning and Policy Division as described below.

Upon receipt of an application which proposes an activity in a protected river or minimum flow reach, as shown by maps or digital layers provided to Water Management Division by Policy and Planning Division, Water Management staff should provide a copy of the application to Water Planning Bureau for review and comment. This notification should be in addition to Planning and Policy Division's review of the weekly water right print out available on the department's home page. Comments provided by Water Planning Bureau need to be considered before recommending action on such applications.

Examples of permitting activities which require this review include stream channel alteration activities, dam construction, diversion works authorized by a water right permit or transfer.

MEMORANDUM

To: Regional Offices
Water Allocation Bureau

Amended Application Processing No. 9
Transfer Processing No. 20
Supplement to Permit Processing No. 5

From: Norman C. Young NCY

RE: **CHANGES TO WATER RIGHT APPLICATIONS**

Date: JANUARY 12, 2000

This memo supercedes Application Processing Memorandum No. 9 dated May 10, 1982. This memo replaces the portion of Permit Processing Memorandum No. 5 under the heading Amending and Application for Permit.

Applications for Permit

Changes to an application for permit must be made by the applicant, not by department staff. If an application for permit is not acceptable because it is incomplete according to the criteria set forth in Water Appropriation Rule 35.03, the department should return the original application to the applicant as directed in Water Appropriation Rule 35.01.d. Department staff should not complete or change the application unless the applicant signs written permission to do so or the applicant is present to initial and date the change. No priority will be established by an incomplete application. To resubmit the original application form, the applicant may line out (not erase or white out) any original entry in a manner that it can still be read and then insert the new information and initial and date the change. The applicant may also submit a new application form in place of the original. When the application is complete, whether on the original form or on a replacement, it will be treated in all respects like a new application.

If an application is acceptable but the applicant wants to amend the application as described in Water Appropriation Rule 35.04, the applicant may make changes on the original application form or may submit a replacement application to the department. Amendments to an original application form must be made by lining out (not erasing or whiting out) the original entry in a manner that it can still be read and then having the applicant initial and date the changes. A replacement application must be identified as "amended" on its face and the original application must be retained in department files to document the date of filing or fee submittal. Because of the need to retain the original application, applicants should be encouraged to submit a replacement application or to visit the office to initial and date changes on the original. If the changes must be made through the mail, the department should keep the original application and encourage the applicants to make the amendments on a replacement

application form. This way, if the application is not amended in a reasonable time period, the original application can still be processed. Consult Water Appropriation Rule 35.04 to determine when amending an application requires advancing the priority date, collecting an additional fee, and/or re-advertising the application.

For changes other than those addressed in Water Appropriation Rule 35.04, it is not always necessary for department staff to seek an amended application from the applicant. It should be a general rule that a "mistake", such as a legal description that does not match the attached map, should be corrected by the applicant prior to publication of the legal notice. However, the department can clarify some items, such as source names that do not conform to the department's data entry standards, by documenting the water right file in the manner set forth below. Standard seasons of use for irrigation purposes can also be addressed by documenting the file with a memorandum. The department can also affect a change by issuing the permit for less than requested in the application. It is not possible in this memorandum to list all the items that might be addressed as "mistakes" or "clarifications" or by partial approval. When in doubt about the appropriate method, it is probably safest to have the applicant make the change or to obtain written permission for the change from the applicant.

When an application is complete but additional information is needed to support some aspect of the application, department staff should request the additional information in writing. Section 42-204, *Idaho Code*, authorizes the department to void the record of an application for permit if an applicant does not provide the requested information within thirty (30) days.

Explanatory information or "clarifications" concerning an application may be added to the "comments" field in the water rights database, but it should not be added to the paper document by department staff. A memo to the file may also be appropriate to further explain an application as long as it is not the mechanism for a change to the application document. Printouts of "comments" and memorandums should be placed on the right side of a water right file so they are not perceived to be part of the actual application, which is placed on the left.

Other Applications

For the most part, the department should treat other kinds of water right applications, including applications for transfer and applications to amend permits, the same as it does applications for permit. As with applications for permit, department staff should not complete or change other kinds of applications unless the applicants are present to initial and date the changes. However, because the filing date of other kinds of applications does not establish a priority date, it is not necessary to keep originals or copies of applications that have been replaced by amended applications unless the amendments were made after publication of the legal notice.

ADMINISTRATOR'S MEMORANDUM

Application Processing No. 65
Transfer Processing No. 21

To: Regional Offices
Water Allocation Bureau

From: Norman C. Young NCY

Re: **DIVERSIONS FROM STATE PROTECTED RIVER REACHES**

Date: January 24, 2000

The purpose of the Water Resource Board's designation of certain river and stream reaches as "protected" is to ensure that the aesthetic and recreational value of those reaches and associated riparian buffers is maintained. To ensure compliance with that purpose, any applications for water right permits or transfers seeking authorization for construction to divert water from a protected reach must be conditioned to avoid prohibitions defined in the Comprehensive State Water Plan.

For example, construction of a well outside the riparian area to intercept the ground water hydraulically connected with the stream would provide the opportunity to divert water without violating a prohibition for construction of diversion works in a protected reach. The riparian area is defined in Section 42-1731(10) *Idaho Code* as the area within 100 feet of the mean high water mark of a waterway. The source would be listed as ground water tributary to the stream. The water right would be administered as if it were part of the stream because of the close hydraulic connection between the well and the stream. This would include a provision to be regulated by the watermaster within a water district if applicable.

If it is not possible to construct a well with a close hydraulic connection to the stream, the applicant should be provided the opportunity to submit alternate ways of protecting the aesthetic and other public interest values associated with the protected steam. A suction hose placed in the stream to divert water, although not considered construction, usually would not be sufficient protection of those values.

State of Idaho
DEPARTMENT OF WATER RESOURCES
1301 North Orchard Street, P.O. Box 83720, Boise, Idaho 83720-0098
Phone: (208)327-7900 FAX: (208)327-7866 www.idwr.state.id.us/idwr/idwrhome.htm

DIRK KEMPTHORNE
Governor
KARL J. DREHER
Director

MEMORANDUM

TO: WATER MANAGEMENT DIVISION STAFF

FROM: NORM YOUNG NCY

RE: 1) ADJUDICATION CLAIMS TOLLING FORFEITURE
2) FISH PROPAGATION FACILITY VOLUME

DATE: MARCH 24, 2000

Adjudication Memo #~~46~~47
Permit Processing Memo #18
Transfer Processing Memo #22
Licensing Memo #11

On December 29, 1999, the Snake River Basin Adjudication (SRBA) district court issued its *Order on Challenge (Consolidated Issues) of "Facility Volume" Issue and "Additional Evidence" Issue*, Subcase Nos. 36-02708, et al., In Re SRBA, Case No. 39576. In that decision the SRBA district court determined, among other things that:

1. "Once a claimant files a claim in the SRBA, for a particular water right, the forfeiture provisions of I.C. § 42-222(2) are also tolled for purposes of establishing forfeiture, so long as the claimant continues to prosecute the claim to a partial decree."

2. Facility volume is not an element of a water right for fish propagation. While a facility volume condition could be carried over from a license into a partial decree, an additional remark would be added to the partial decree indicating that the condition has no effect on the use of the right.

Water Management Division will implement this decision as follows:

Adjudication Bureau:

1. Agents investigating water use in the SRBA shall only investigate water use prior to the date the water right claim was filed with IDWR for purposes of determining whether forfeiture has occurred. Field examinations made, photographs taken, or other evidence of non-use of a water right after the date a claim was filed with IDWR shall not be used in preparing the recommendation on the claim for the Director's Report.

2. Facility volume conditions will not be included in the Director's Report for fish propagation claims whether or not the claim is based upon an existing license that includes the facility volume condition.

Water Allocation Bureau:

1. Filing a claim and participating in the SRBA does not prevent a water user from making use of his/her water right. Therefore, in the context of transfer or other applicable administrative proceedings, IDWR will continue to consider nonuse of water after the filing of an SRBA claim as relevant to whether forfeiture has occurred.

2. Facility volume conditions will not be included in new permits for fish propagation and will not be carried over from a permit to the resulting license. IDWR will not, on its own initiative, endeavor to enforce a facility volume condition associated with any existing right.

Except as specifically discussed in this memorandum, IDWR standards regarding the investigation of SRBA water right claims and the processing of administrative applications remains unchanged.

MEMORANDUM

TO: **DISTRIBUTION LIST**

FROM: **NORM YOUNG** NCY

RE: **FURTHER GUIDANCE ON SB 1337, AMENDING SECTION 42-221, IDAHO CODE. (AUGMENTING THE GUIDANCE MEMORANDUM, DATED JUNE 26, 2000, ISSUED UNNUMBERED BY GLEN SAXTON)**

DATE: **January 2, 2001**

Application Processing No.: 66
Permit Processing No.: 19
Transfer Processing No. 23

Senate Bill 1337 enacted by the 2000 Legislature and effective on July 1, 2000 revised the fee schedule for filing applications for permits to appropriate water and for applications to transfer existing water rights. Initial guidance for determining transfer fees was provided in a memorandum from Glen Saxton dated June 26, 2000. Experience applying the new fee schedule indicates that additional consideration needs to be given to determine the appropriate fee for an application proposing to change the use of only a part of a water right(s).

Section 42-221, Idaho Code, provides for basing the filing fee upon the "quantity" of water being transferred. Thus, if an application proposes a change to an entire water right, the fee should be based upon the quantity of the right. However, if the application for transfer involves a change to only a part of a water right, the filing fee should be determined by the quantity of the part to be changed. One variation of a change that only affects a part of a right is if the right is to be split into one or more parts and a separate diversion and delivery system is used for each part. The June 26, 2000 memorandum describes the procedure for determining an appropriate fee when the right is split.

A second variation is if the change does not split the right even though the change affects the use of only a part of a right. This memorandum provides additional guidance to be used to determine the appropriate fee in this case. This variation can occur under several scenarios including the following examples:

a. The point of diversion is to be changed to divert a part of the quantity authorized under the right from a new location with the remainder of the right to be diverted without change. For example, one of several wells listed as points of diversion

on a water right is to be relocated to a different 40-acre subdivision with no other changes to the use of the right. In this case, the applicant should identify as additional information on Part 1 of the application the maximum quantity to be diverted at the new location and the fee should be based upon this quantity. If the application is approved, the approval should be conditioned to limit the quantity of water allowed to be diverted at the new point to no more than the amount indicated on the application.

b. A part of the place of use is to be changed to a new location. For example, a specific 40 acre tract of a 1000 acre place of use is to be switched to another 40 acre tract without a change to the remaining 960 acres in the place of use and the diversion/distribution system will otherwise be unchanged. The filing fee should be based upon the proportionate quantity of water appurtenant to the part of the place of use that is being changed. If the applicant proposes a change in the quantity different than the proportionate share, the application should be filed reflecting a split in the right.

c. The nature of use of a part of a right is proposed to be changed. For example, 10 cfs of a 50 cfs irrigation right is proposed to be changed to recharge purposes. The filing fee should be based upon the 10 cfs proposed to be changed assuming no other changes are proposed.

d. If changes are proposed to both the place of use and the point of diversion which involve only a part of the right, the fee should be based upon the larger of the two changes assuming that the two changes can appropriately be shown on the same application; i.e., still use in a common system and ownership is not split.

The need to advertise a transfer application statewide should be based upon the quantity of water being changed by the transfer rather than the full quantity represented by the right(s) being changed. Legal notices should be streamlined to avoid duplicate and unnecessary information.

Applicants should be advised early in the process that staff time spent researching an application involving multiple rights will be recorded. When appropriate, the applicant will be billed for cost of researching the rights in accordance with Section 42-221(J), Idaho Code.

I anticipate that these examples will not cover all of the possible scenarios. I encourage you to bring to the attention of Water Rights Permit Section situations, as they arise, that do not fit the available guidance.

MEMORANDUM

To: Distribution List

From: L. Glen Saxton LGS

RE: **GUIDANCE ON SB 1337 AMENDING SECTION 42-221, I.C.**

Date: June 26, 2000

Senate Bill 1337 was enacted by the legislature during the last session and becomes effective on July 1, 2000. The bill which amended section 42-221, Idaho Code, provides for increased filing fees for applications for permits and for applications for transfer. The total fee for filing an application for transfer should be based on the summation of the diversion rates for the rights shown on the application. As an example, if an application for transfer proposes to change three rights, one in the amount of 0.8 cfs, a second in the amount of 0.3 cfs and the third in the amount of 0.2 cfs, the total filing fee should be $290 based on the summation of 0.8 cfs, 0.3 and 0.2 cfs = 1.3 cfs.

As a variation of this example, assume the same three rights above are conditioned to not exceed a combined rate of diversion of 0.8 cfs. In this case, the fee should be based on the combined rate of diversion of 0.8 cfs and should equal $250.

If an application for transfer proposes a change to part of a water right, the filing fee should be based on the part to be changed, if a separate diversion and distribution system will be used for the part to be changed and the right will be split. A change to part of a water right with a separate diversion will require a split.

A transfer accompanied by evidence of a change in ownership of the water right(s) will <u>not</u> require a separate filing of a change in ownership as required by Section 42-248, I.C. or Section 42-1409 (6), I.C.

Per section 42-240(2) Idaho Code, filing fees for water right exchanges are the same as for transfers.

The state office will issue appropriate press releases after July 1, 2000. The state office will also provide new instructions reflecting the changes. Old transfer instructions can be used after July 1 as long as the old fee amount is removed and the new fee schedule is inserted into the instructions. Inserts will be provided by the state office.

Attached is a copy of the senate bill in underlined, struck-out format and new instructions for filing an application for permit and an application for transfer.

ADMINISTRATOR'S MEMORANDUM

Transfer Processing No. 24

To: Water Management Division Staff

From: Jeff Peppersack

RE: **TRANSFER PROCESSING POLICIES & PROCEDURES**

Date: December 21, 2009

This memorandum supersedes Transfer Processing Memorandum No. 24 dated January 21, 2009.

The purpose of this memorandum is to provide policy guidance for processing applications for transfers of water rights pursuant to Section 42-222, *Idaho Code*, and other applicable law. The revisions to the October 30, 2002 memorandum are provided to recognize statewide application of this memorandum, to clarify the guidance based on updates to statutes and Department policy, and to streamline transfer processing to reduce application processing time and existing application backlogs. These policies and procedures are to be followed until rescinded or amended, or superseded by statute or rule or court decision, to assure that applications are processed efficiently and with consistency.

Regardless of whether or not an application for transfer is protested, Section 42-222, *Idaho Code*, requires that the department evaluate whether there would be injury to other water rights, there would be an enlargement in use of the original right, the proposed use would be a beneficial use, the proposed use would be in the local public interest, the proposed use would be consistent with the conservation of water resources within the State of Idaho, and whether the proposed change would impact the agricultural base of the local area. In the case where the place of use is outside of the watershed or local area where the source of water originates, the department must also evaluate whether the change would adversely impact the local economy of the watershed or local area. The department must also evaluate the validity of the right (or part thereof) being changed and must assure that the applicant owns the right or otherwise has the authority to apply for the transfer.

1. When a Transfer is Required.

Section 42-222, *Idaho Code*, requires the holder of a water right to obtain approval from the department prior to changing: (1) the point of diversion, (2) the place of use, (3) the period of use, or (4) the nature of use of an established water right. An established water right is a licensed right, a decreed right, or a right established by diversion and beneficial use. Approval is sought by filing an application for transfer with the department. A claim in an adjudication or a statutory claim must be filed to allow a transfer application to be processed for a right based upon diversion and beneficial use.

Changes to Elements of a Water Right. An application for transfer is required if a proposed change would alter any of the four elements of the water right listed above that can be changed pursuant to Section 42-222, *Idaho Code*, as recorded with the department or by decree. Conditions or other provisions of a water right may further define or limit a recorded element of a water right; an application for transfer is required for a proposed change that could alter such a condition. For example, a proposed change of use under a water right for an industrial use, which includes a condition limiting the quantity of water that can be consumptively used, to a different industrial use that would increase the quantity of water that would be consumptively used can not be made unless enlargement is prevented.

If a proposed change has the potential to injure other rights or the potential to enlarge the right, even when there would be no change in any of the recorded elements of the right, an application for transfer should be filed to provide for evaluation of injury and enlargement issues before the change is made. For example, if the point of diversion from a fully appropriated creek is proposed to be moved where additional water would be available for diversion or if the proposed point of diversion as changed would move upstream of the points of diversion for other rights, the change can not be made unless other conditions are imposed, such as mitigation, to prevent injury.

Changes to Points of Diversion. If a point of diversion is proposed to be moved to a different tract than described as an element under an established water right, then a transfer application is required. This includes a change from one 10-acre legal subdivision to another if the point of diversion has been previously described as a 10-acre legal subdivision. An application for transfer is also required when a point of diversion is proposed to be added for a water right, even when the existing authorized point of diversion is recorded as a 10-acre legal subdivision and the additional diversion would be within the same 10-acre legal subdivision.

If a point of diversion is proposed to be moved from a tributary to a location downstream from the confluence of the tributary and the surface water stream to which the tributary is joined, then an application for transfer is required. If a point of diversion is proposed to be moved from a stream to the stream to which it is tributary at a location upstream of the confluence between them, or moved from one tributary to another tributary, an application for exchange is required pursuant to Section 42-240, *Idaho Code* rather than an application for transfer.

Changes in Place of Use. An application for transfer is required if a change in the location of use between 40-acre legal subdivisions is proposed that would result in an increase in the number of acres within a 40-acre legal subdivision or in use of water at a new 40-acre legal subdivision that is not included within the recorded place of use element for the right. An application for transfer is also required for a proposed change in location of use under a water right for irrigation to a location outside of prescribed boundaries such as those provided under Section 42-219, *Idaho Code*, with or without a proposed change in purpose of use, except for those rights held by irrigation districts or municipal providers, even when the change in location would be included within the same 40-acre legal subdivisions existing prior to the proposed change. A proposed change to any water right held for irrigation involving a change in the number of irrigated acres of less than one acre at the original place of use or at a proposed new place of use is not approvable unless the proposed change involves a new purpose of use within the original place of use or the applicant provides a verification procedure approved by the Director that can be practically administered to prevent injury or enlargement.

Consolidation of Acreage. An application for transfer is required for proposed consolidation of water use for irrigation by permanently reducing the number of acres authorized for irrigation under a water right, while maintaining the original diversion rate or annual diversion volume.

Land Application of Wastewater. An application for transfer is required for a proposed change in the place of use under a water right for uses such as industrial, dairy, or confined animal feeding operations that would allow land application of wastewater from that use or change the location of lands used for application of wastewater, when there is not a full existing water right for irrigation of the place of use receiving wastewater.[1]

Correction of Errors. An application for transfer may also be required to correct errors in licenses or decrees. For example, a transfer application may be required to correct the location of the place of use of a water right decreed by a court if the decree is later determined to be in error. However, a transfer action is not always required to correct such errors. For example, if a water right claim is determined to be in error, the claim can be amended to correct the error. Similarly, some clerical errors in a license or decree may be corrected by issuance of an amended license or decree (by the jurisdictional court) without using the transfer process. Also, a change to a description of the location of the place of use or point of diversion, as used by the department for administration of water rights, resulting from improved methodology does not require an application for transfer, as described below. In addition, conditions that are no longer applicable may be modified or removed from a license without a transfer, provided other rights are not materially affected. For decrees, conditions that are no longer applicable should be noted in comments on the department's electronic record for the right. However, a change to any element of a decreed water right requires filing an application for transfer, unless the appropriate court makes the change by amending the decree.

[1] The guidance provided here effectively revises the guidance to staff for filing an application for transfer as provided in Application Processing Memorandum No. 61 concerning wastewater from industrial uses.

2. When a Transfer is not Required.

An application for transfer is not required if a proposed change will not alter any of the elements of a water right as licensed or decreed, except that even when the recorded elements of a water right are not changed an application should be filed under such circumstances described in Section 1 above. In addition, an application for transfer is not needed when an accomplished change to a water right or an enlargement of a right has been claimed in an adjudication in accordance with the provisions of Sections 42-1425 or 42-1426, *Idaho Code*.

Changes in Consumptive Use. Consumptive use of water under a water right is not, by itself, an element of the water right subject to the requirements to file an application for transfer. Unless there is a specific condition of the water right limiting the amount of consumptive use, changes in water use under a water right for the authorized purpose of use that simply change the amount of consumptive use do not require an application for transfer provided that no element of the water right is changed. However, when determining the amount of water that can be transferred pursuant to an application for transfer proposing to change the nature or purpose of use, and for certain other circumstances as described herein, historical consumptive use is considered.

Change in Ownership. An application for transfer is not required to change the owner of record for a water right or address of record for a right holder. Changes in ownership or address are to be filed in accordance with Section 42-248, *Idaho Code*, or for adjudication claims in accordance with Section 42-1409(6), *Idaho Code*. However, a transfer application filed pursuant to Section 42-222, *Idaho Code*, accompanied by evidence documenting a change in ownership for a water right, or showing a change in the address of the owner of a water right, satisfies the requirements of Section 42-248, *Idaho Code*.

An application for transfer is not required to change the owner of record of one or more water rights, or portions thereof, that are part of a larger group of water rights authorized for use within and appurtenant to a permissible place of use[2] if the conveyance documents provide evidence of the change in ownership and appurtenance of each of the rights and if other elements of the rights will not be changed.

An application for transfer is not required to eliminate one or more points of diversion authorized under a water right through a change in ownership if the conveyance

[2] A permissible place of use is defined as a legal description of the authorized location where water may be applied under a water right for irrigation use, but the use in any year is limited to a specified number of acres which is less than the larger described location. For example, a water right may describe a permissible place of use as four 40-acre legal subdivisions totaling 160 acres, but the water right also limits the acreage that may be irrigated to 40 acres. The water right owner cannot irrigate more than 40 acres in a given year under the right. A permissible place of use is typically, but not always, irrigated by multiple rights with separate acreage limitations that, when used together, provide for irrigation of the entire permissible place of use in the same year.

documents provide evidence of the limitation and if other elements of the rights will not be changed.

Partial Relinquishment. An application for transfer is not required to relinquish a portion of a water right such as elimination of a purpose of use or a point of diversion or a reduction in acres and proportional rate. The water right owner should provide a notarized statement of relinquishment including specific identification of the water right(s) and the specific reduction(s).

Split Rights. An application for transfer is not required when a water right for irrigation is proposed to be split, with notice to the department pursuant to the provisions of Section 42-248, *Idaho Code*, such that a disproportionate per acre share of the right would be conveyed to another party provided that the resulting diversion rates do not exceed 0.02 cfs per acre, the amount of water historically applied per acre, or the amount of water diverted at a particular point of diversion, whichever is greater, for that part of the right conveyed or retained, and provided no other changes are made.

Changes to Points of Diversion within Recorded Location. An application for transfer is not required if a change in point of diversion is proposed to be moved to a location within the same legal public land survey subdivision as currently recorded on the water right and the change will not enlarge the right or injure other rights (if within a recorded legal public land survey subdivision, a transfer is required if injury is likely when moving the point of diversion to bypass another point of diversion or when moving a well significantly closer to another well or surface water source).

An application for transfer is not required for the situation described in the preceding paragraph, even when the point of diversion is described by a shapefile in the department's GIS database. The department will not initiate an enforcement action against the water right owner due to a discrepancy between the department's shape file and the physical location of use within the recorded legal subdivision if the discrepancy is limited to the situation described in the preceding paragraph. The department may update the shapefile in its GIS database from its own information or information provided by the water right owner.

Replacement of Point of Diversion. An application for transfer is not required to replace a point of diversion if the new point of diversion is constructed at the same location as described in the license or decree for the water right, and the change will not enlarge the right or injure other rights.

Refined Descriptions. An application for transfer is not required when a change in the description of the location of the point of diversion or place of use is only the result of improved methodology for referencing and displaying the location, which results in a more accurate description of the same physical location. The department will not initiate an enforcement action against the water right owner due to the discrepancy between the water right record and the referenced location if the discrepancy is created by better methodology and is not due to a change in the physical location. However, if the water right owner wishes to correct the water right record, an application for transfer

or an appropriate amendment will be required, as previously described for correction of errors.

Changes in Place of Use within Recorded Location. An application for transfer is not required if a change in the location of use within 40-acre legal subdivisions is proposed that would not result in an increase in the number of acres within any 40-acre legal subdivision nor use of water at a new 40-acre legal subdivision (except for a proposed change in location outside of prescribed boundaries such as those provided for irrigation use under Section 42-219, *Idaho Code* or by court decree, even when the change in location would be included within the same 40-acre legal subdivisions existing prior to the proposed change).

An application for transfer is not required for the situation described in the preceding paragraph, even when the place of use is described by a shapefile in the department's GIS database. The department will not initiate an enforcement action against the water right owner due to a discrepancy between the department's shape file and the physical location of use within the 40-acre legal subdivisions if the discrepancy is limited to the situation described in the preceding paragraph. The department may update the shapefile in its GIS database from its own information or information provided by the water right owner.

Generally Described Place of Use. As provided in Section 42-219, *Idaho Code*, an application for transfer is not required to change the place of use within a generally described place of use. A generally described place of use may be by court decree or as provided in Section 42-219(5) and (6). Pursuant to Section 42-219(7), any change within a generally described place of use can not result in an increase in the diversion rate, or in the total number of acres irrigated under the water right, and can not cause injury to other water rights. Any change to the boundaries of a generally described place of use requires an application for transfer, except for a municipal provider as described below or for an irrigation district where changes in boundaries must be documented by a map of the revised boundaries filed with the department in accordance with Section 43-323(2), *Idaho Code*.

Municipal Places of Use. An application for transfer is not required to change or add a place of use for "municipal purposes" within the "service area" of a "municipal provider." See Sections 42-202B and 42-222(1), *Idaho Code*, for appropriate definitions and provisions governing use of municipal water rights. The ownership of a portion of a municipal water right held by a municipal provider for reasonably anticipated future needs can be changed to a different municipal provider subject to the provisions of Section 42-248, *Idaho Code*. However, the right can not be changed to a place of use outside the service area of a municipal provider or to a new nature of use, and an application filed for such a change is to be returned and any associated application fee refunded.

In-stream Stock Watering. An application for transfer is not required to divert water away from a stream for stock watering purposes provided the diversion is added and used in conjunction with an in-stream stockwater right and provided the diversion meets

certain conditions pursuant to Section 42-113(3), *Idaho Code*. See guidance memorandum for in-stream stock diversions dated June 26, 2000, for additional information.

Intensified Use of Water. An application for transfer is not required to increase production under an authorized use of water, unless the proposed change would also result in a change to one or more of the elements of the water right(s) as licensed or decreed. For example, an application for transfer is not required to increase the number or volume of raceways in a fish propagation facility, increase the number of cows at a dairy, change irrigation to a more water consumptive crop, or increase the generating capacity of hydroelectric generators, so long as none of the elements of the associated water rights are changed.

Mitigation Through Non-Use of a Right. An application for transfer is not required to mitigate for the diversion and use of water under another right if the mitigation is accomplished through non-use of water under an existing valid water right, except under specific circumstances where a transfer is required as part of the Department's approval of the mitigation plan (see Section 42-223 (10), *Idaho Code* for reference to mitigation approvals where non-use of water may apply).

Land Application of Wastewater to Replace Existing Supply. An application for transfer is not required for a proposed change in the place of use under a water right for uses such as industrial, dairy, or confined animal feeding operations that would allow land application of wastewater from that use or change the location of lands used for application of wastewater, when there is a full existing water right for irrigation of the place of use receiving wastewater.[1]

3. Requirements for an Acceptable Application for Transfer.

The department is a public service oriented agency, and department employees traditionally have helped applicants complete transfer application forms. The existing transfer backlog, together with the increasing number and complexity of new applications for transfer, requires that staff focus their time on processing existing acceptable applications. Department employees are encouraged to provide general assistance to applicants but should refrain from completing application forms on behalf of applicants.

An applicant or qualified consultant must prepare and submit an application for transfer in accordance with the minimum requirements enumerated below to be acceptable for initiating the processing of the application by the department. An application that does not comply with these minimum requirements is to be considered incomplete and is to be returned to the applicant along with a letter or checklist identifying the deficiencies. The letter shall state that unless the application is resubmitted within 30 days of its return, the application fee will be refunded. An application for transfer that satisfies the minimum requirements will be processed in accordance with Section 5, Information Needed to Complete Processing of a Transfer Application.

(1) Application Forms. An application for transfer must be submitted on a current form provided by the department entitled, "Application for Transfer of Water Right." The current form is available from the department's Internet homepage at:

http://www.idwr.idaho.gov/water/rights/water_rights_forms.htm

(2) Name and Address. An application for transfer must include the name and address of the applicant. In addition, the application must include the name and address of any new right holder(s) for the water rights (or parts thereof) being transferred, if different than the applicant. The applicant's name must match the department's current record of ownership for the water rights (or parts thereof) being transferred. Otherwise, adequate documentation must be included to show that a change in ownership or authority to make the change has legally occurred. Adequate documentation can be a warranty or other deed, title policy, contract of sale or option for purchase by applicant (if the contract or option allows the transfer), or other similar document confirming ownership of the water right(s) or the authority to change the water right. See Records Memorandum No. 9 for additional guidance on water right ownership documentation.

A transfer application filed to change a right (or part thereof) claimed in a pending adjudication, where the claimed place of use is based on an accomplished transfer pursuant to Section 42-1425, *Idaho Code*, must include adequate documentation demonstrating the applicant's ownership of the right or authority to make the change.

(3) List of Water Rights to be Changed. An application for transfer must list all water rights for use in a common system of diversion and distribution for which the point of diversion, place of use, period of use, or nature of use are proposed to be changed (the water rights to be transferred). Proposed changes which involve separate diversion and distribution systems must be filed as separate applications. A proposed change to the remaining portion of an existing water right subsequent to a proposed transfer requires a separate application for transfer.

(4) Associated Water Rights or Water Supply. The application must include a separate list of individual water rights, other than those proposed to be changed, and a description of water supplied by a canal company, irrigation district, or municipality, that provide water currently used in the same diversion system or at the same place of use as the right(s) proposed to be transferred (associated water rights or water supply). In addition, the application must include a separate list of associated water rights or water supply proposed to be used in the same system or at a new place of use. If the associated water rights or water supply are not owned by the applicant and changes to conditions

for those rights are necessary, documentation must be submitted confirming that the applicant has the legal authority to make such changes on behalf of the current owner of the other rights.

Changes to conditions or remarks for associated water rights that are necessary as a result of an approved transfer and that do not affect the rights of other persons or entities can be made without a separate transfer application or process. Such changes usually result from a division in ownership and should be included in the transfer approval document.

(5) Reason for Change. The application must list the purpose for and a general statement of the reason for the proposed change.

(6) Description of Proposed Change. The application must describe in writing the proposed changes, which must include the following:

a. The right number(s) assigned by the department for the right(s) proposed to be changed must be identified. If the right was established by a beneficial use for which a claim has not been filed, a claim must be filed before or together with the transfer application. If the right is represented by a decree and the department has not assigned a number to the right, a copy of the decree must be included with a description of the right that is proposed to be changed.

b. The amount of water proposed to be diverted, as a rate of flow in cubic feet per second and as acre-feet per year, if the transferred water right has a volume limitation, for natural flow and ground water rights must be set forth. The amount of any stored water involved in a transfer must be identified in terms of acre-feet per year for each purpose of use listed.

c. The proposed nature or purpose of use must be stated. For non-irrigation uses such as "industrial" or "commercial," a more detailed description of the proposed use(s) must be provided under the "Remarks" section of the application, or as an attachment to the application. For applications proposing to change the nature of use to municipal purposes for reasonably anticipated future needs (RAFN), the applicant shall provide information to establish that the applicant qualifies as a municipal provider and that the RAFN, service area, and planning horizon are consistent with the definitions and requirements specified in Section 42-202B, *Idaho Code*.

d. The period of each year during which water is proposed to be diverted, or diverted and stored, and beneficially used must be set forth for each use listed.

e. The source of water for the proposed changes must be listed. An application proposing a diversion, injection, and re-diversion of water must list the source for the original diversion as the source for the injection and re-diversion. An application proposing to change the point of diversion to a location resulting in a change from ground water to surface water or from surface water to ground water shall include an analysis confirming a direct and immediate hydraulic connection (at least 50 percent depletion in original source from depletion at proposed point of diversion in one day). See Section 5c. (7) for further details.

f. The legal description of the point(s) of diversion must be described. The description must be to the nearest 40–acre subdivision or U. S. Government Lot of the Public Land Survey System. Existing point(s) of diversion should be described to the nearest 10-acre tract, if based on a previously recorded 10-acre description or other accurate means such as GPS or a detailed and accurate map. Proposed point(s) of diversion need only be described to the nearest 40-acre tract. The location of springs must be described to the nearest 10–acre tract. Subdivision names, lot and block numbers, and any name in common usage for the point of diversion should be included in the "Remarks" section of the application form.

g. Except as provided herein, the legal description of the place of use must be set forth to the nearest 40-acre subdivision or U. S. Government Lot of the Public Land Survey System. Subdivision names, block and lot numbers, and any name in common usage for the place of use should be included in the "Remarks" section of the application form. For water rights held by irrigation districts, municipal providers, and others included under the provisions of Sections 42-202B or 42-219, *Idaho Code*, the place of use may be generally described even if previously described to the nearest 40-acre subdivision or government lot.

    i. If irrigation is a purpose of use, the number of acres in each 40-acre tract of the place of use or within a generally described place of use must be shown. The location of uses, other than for municipal providers or

for irrigation, must be identified in the appropriate 40-acre tract(s).

ii. Except for wastewater when there is a full existing water right for irrigation of the place of use receiving wastewater, if a proposed change includes disposal or use of wastewater by land application to growing crops the application must identify the location of the waste disposal area by legal description under the use from which the wastewater originates.

h. An adequate description of the proposed diversion, delivery and application system(s) must be provided. This may include preliminary sizes and dimensions of pumps, pipelines, headgates, ditches, dams, impoundments, and application equipment. The type and location of measuring devices might also be required for applications providing for measurement of water to address specific injury or enlargement concerns. For large existing systems, such as those owned by municipal providers, irrigation districts, and canal companies, only those features proposed to be added or modified need to be described.

(7) Map of System. A map corresponding to the written description above must be included showing the location of points of diversion, reservoirs, dams, canals, ditches, pipelines, and other works proposed to be used in the diversion and conveyance of water. The map must clearly show the location of the place of use including lands to be irrigated, if any. If only a part of the water right(s) is proposed to be changed, the map must include the location of the part of the existing recorded right(s) proposed to be removed (or changed). Legal descriptions including townships, ranges, sections, quarter-quarters, and government lots must be evident or labeled unless other reference information is evident on the map to identify the specific location. In lieu of creating a map, a copy of a published map, such as a U. S. Geological Survey quadrangle map, or an aerial photograph, can be attached to the application with the required identification shown thereon. For large existing systems, such as those owned by municipal providers, irrigation districts, and canal companies, only those features proposed to be added or modified need to be shown.

(8) Response to Questions on the Form. The application for transfer must include responses to the questions on the application form concerning the validity of the right, the proposed use of the land from which the right is proposed to be removed (if applicable) and the existence of mortgages or liens. In addition, the application should address any agreements or commitments not to divert water under the right(s)

proposed for transfer such as a lease to the water supply bank (WSB), enrollment in the federal Conservation Reserve Enhancement Program (CREP) or dedication of the right(s) for mitigation purposes.

(9) Changes to Part of a Right. If only a part of a right is being changed, the application for transfer must define that part by describing each of the elements, as currently licensed or decreed or otherwise recorded, for the part of the right being changed.

(10) Signature. The application for transfer must include the signature of the applicant or the applicant's authorized representative. If a representative signs the application, evidence of authority to sign for the applicant must accompany the application. An application in more than one name must be signed by each applicant unless the right is held in the name of one joint owner "or" other joint owner(s), or the right is held in the name of one joint owner "and/or" other joint owner(s).

(11) Filing Fee. The filing fee provided in Section 42-221, *Idaho Code*, must be submitted with the application for transfer. If the applicant is a governmental agency, a purchase order for the required amount is acceptable. (See the memorandum titled "Guidance on SB 1337 Amending Section 42-221, I.C.," dated June 26, 2000, and Transfer Processing Memorandum No. 23 for further guidance on application fees.)

(12) Changes to Point of Diversion from Eastern Snake Plain Aquifer. Except as provided below, if the application for transfer proposes to move the point of diversion for a water right to divert and use ground water from one location to another within the Eastern Snake Plain Aquifer (ESPA) including any modeled tributary aquifers, the applicant must submit an attachment with the application that sets forth the time series of calculated depletions (transient to steady-state) to reaches of the Snake River that are hydraulically-connected to the ESPA using or based on the department's current ground water model for the ESPA, or other equivalent analysis acceptable to the department. When using results from or based on the department's ground water model, the time series of calculated depletions must be for the cells containing the points of diversion both before and after the proposed transfer (initiating at the date of priority of the water right and ending at future steady state condition). If the cells are the same, the attachment is not required except as described below. A copy of the department's ESPA ground water model, or associated transfer spreadsheet[3] can be obtained by contacting the department or visiting the department's web site.

[3] The Department's ESPA transfer spreadsheet has a fixed 150-year analysis period which may not reach a true steady-state condition in all instances; however, the analysis period provided by the spreadsheet is acceptable to the Department for purposes of the required attachment. For purposes of this

The purpose of the time series of depletion attachment is to provide a basis for evaluating whether the proposed transfer will increase depletions to hydraulically-connected reaches of the Snake River.[4] Increases in such depletions are presumed to cause injury to existing water rights because all of the hydraulically-connected reaches of the Snake River (including tributary springs) have water rights that are not fully satisfied at certain times. Increased depletions greater than 10 percent for any reach are presumed to cause injury and must be fully mitigated such that there are no increases in depletion to those reaches except as described below.[5]

Increased depletions greater than 10% in any reach are considered insignificant under either of the following conditions and will not require mitigation for the proposed transfer to be approvable:

a. Increased depletions (transient to steady-state) to the reach are two acre-feet or less per trimester; or

b. The reach, at steady-state conditions, will not be depleted by an amount greater than 10% of the total depletion to all reaches caused by the diversion under the proposed transfer.[6]

Where mitigation is necessary for increased transient-state depletions, variance from the requirement for full mitigation during the transient state is allowed to provide for periods of static mitigation within the period of change. Mitigation for increased transient-state depletion to a reach is acceptable if the resultant depletion to a reach is no more than 5% over the simulated pre-transfer depletion to the reach and any deficient mitigation is approximately the same as excess mitigation during the transient state.

If the application for transfer proposes to move or add a point of diversion within or adjacent to the model cell for the existing point(s) of diversion, the attachment described above is not required when the application is submitted. However, if the department determines that the proposed change may significantly increase depletions to a

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memorandum, the transient state is the initial period of significant change to calculated depletions prior to approaching steady-state conditions.

[4] Increased depletions are based on the depletion volume that will be transferred through the change in point of diversion (i.e. not to include any volume for unchanged portions of rights or other associated rights not part of the change in point of diversion).

[5] This 10% threshold for mitigation reflects overall model uncertainty, of which one factor is the inherent error associated with measuring flows of water used as input to the model.

[6] This exclusion from the mitigation requirement is consistent with the Department standard in various delivery calls against ground water users diverting water from the ESPA that establishes a minimum percentage of 10% below which ground water users are not required to mitigate or replace simulated depletions to the reach.

hydraulically-connected reach of the Snake River (including tributary springs), the attachment will be required to complete processing of the application for transfer. See the Department's August 13, 2007 memo entitled, "ESPA Transfer Spreadsheet Version 3.1 – Implementation and Use" for further guidelines on use of the ESPA transfer spreadsheet.[7]

If the applicant offers reduced ground water withdrawals as mitigation, any proposed schedule for adjusting reduced withdrawals must also be set forth in the application for transfer.

Increased reach gains from other proposed ESPA transfers (offsetting transfers) can be used to provide part or all of the mitigation necessary for reaches requiring mitigation due to increased depletions (as determined by a stand-alone analysis of each individual transfer as described above). If the applicant offers offsetting transfers as mitigation, the transfer applications shall be submitted together as part of a plan to mitigate the individual transfer effects.

(13) Historic Beneficial Use. If the application for transfer proposes to change the nature or purpose of use or the season of use, the applicant must include an attachment documenting the historic extent of beneficial use under the right. For a transfer seeking to change a water right from irrigation, the attachment must provide sufficient data and information to determine historic consumptive water use. This can be satisfied by submitting records of cropping pattern or rotation, or records of water diverted and system efficiency, for at least the most recent, five consecutive years as described in Sections 5d.(5) and (6). If the application for transfer proposes to change the place of use for a supplemental water right, the applicant must include information to demonstrate that the supplemental right will not be enlarged (see Sections 5d.(3), (4) and (5) for definition and further discussion of supplemental rights).

(14) Electronic Shape Files or Photographs Documenting Place of Use Changes. If the application for transfer proposes to change the purpose of use for a water right from irrigation to another use, or change the place of use for a water right for irrigation to another location, either of which requires the drying up of acres at the original place of use, the applicant must submit an attachment to the application for transfer. The attachment must provide a clear delineation of the location and extent of the irrigated acres prior to the proposed transfer, and must also

[7] This memorandum supersedes portions of the Department's August 13, 2007 memo entitled, "ESPA Transfer Spreadsheet Version 3.1 – Implementation and Use" related to mitigation within 5 percent for transient and steady-state increases. The changes are being implemented to be consistent with use of the current ground water model for administration of water delivery calls in the ESPA. The remaining portions of the memo are still applicable.

provide a clear delineation of the location and extent of the irrigated acres, if any, after the transfer, if it is approved. This attachment may either consist of two electronic shape files in a format that is compatible with the department's GIS system or aerial photographs of sufficient detail acceptable to the department with the boundaries of the irrigated areas clearly shown and referenced to the Public Land Survey System. If a place of use involved with the application for transfer currently consists of a permissible place of use or a generally described place of use (see section 3(6)g above), then the applicable attachment is not required provided the application contains a clear statement that the boundaries for that place of use are not proposed to be changed by the transfer and the total number of irrigated acres within the place of use before and after the transfer is clearly set forth.

(15) Applications Involving Water Rights for Domestic Purposes. An application for transfer involving multiple water rights for domestic purposes as defined in Section 42-111, *Idaho Code*, even when evidenced by a decree, that proposes to establish a use, which itself would not be included within the scope of the definition for domestic purposes in Section 42-111, *Idaho Code*, is not approvable except as provided below. *Idaho Code* specifically prohibits the diversion and use of water under a combination of domestic uses to provide a supply of water for a use that does not meet the exemption of Section 42-227, *Idaho Code*, and is required to comply with the mandatory application and permit process for appropriating a right to the use of water pursuant to Chapter 2, Title 42, *Idaho Code*. An application for transfer filed for such a change is to be returned together and any associated application fee refunded.

An application for transfer involving multiple water rights for domestic purposes that is not proposing to change the nature of use or place of use may be approvable if the individual domestic uses will remain in place and the transfer is only intended to connect individual wells into a common system. Such transfer application may also include addition of a non-domestic right to add a use so long as the existing domestic uses will remain in place and will not be enlarged as a result of the transfer.

4. Changes to Applications for Transfer.

Amendment of Application. An applicant may revise or amend an acceptable application for transfer to clarify or correct information on the application. Significant changes to the place, period, or nature of the proposed use, amount of water, method or location of diversion, or other substantial changes from those shown on a pending application for transfer, will require filing a new application for transfer to replace the original application. If the revisions are not substantial, the application may be revised or amended with an initialed, dated endorsement by the applicant, or by the applicant's representative, on the original application, or by a letter describing the amendments in

sufficient detail. Changes initialed or signed by the applicant's representative must be accompanied by evidence providing authority to sign for the applicant if not previously provided. Changes to the application or supporting information are not to be made by staff under any circumstances. A replacement application must be identified as "changed," "amended" or "revised" on its face so that it can be distinguished from the original application, and the original application must be marked as "superseded." An additional filing fee may be required if the revised or replacement application involves more water than proposed in the original application for transfer. A re-advertisement fee, as provided in Section 42-221F, *Idaho Code*, will be required if notice of the original application has been published and changes to the original application are significant and warrant re-notice. (See Transfer Processing Memorandum No. 20 for additional information regarding changes to applications.)

Assignment of Application. An applicant may assign, in writing (must be notarized), an application for transfer to another entity while the application is pending before the department. An assignment does not require additional notice of the application to be published, and there is no fee for an assignment of an application. The assignment will change the name of the transfer applicant, but ownership of the water right(s) involved in the transfer cannot be changed without proper notice and documentation. Section 42-248, *Idaho Code*, provides that a transfer application can substitute for a notice of change in water right ownership if adequate documentation is provided with the application.

5. Processing an Application for Transfer Prior to Hearing.

Processing of an application for transfer consists of the steps outlined below. Flexibility is provided for some steps with the intent to streamline or expedite processing of routine or non-complex applications. Regional Managers have been delegated authority to sign routine water right approvals and denials and should continue to implement their signature authority as outlined in the Department's June 7, 2007 memo entitled, "Delegation of Authority for Water Right Approval/Denial" and other delegation that may be provided.

(1) Initiating Processing – Data Entry. Once an application has been accepted and the application fee receipted pursuant to Section 3, Requirements for an Acceptable Application for Transfer, the Regional Office shall complete data entry of the basic information contained in the application and initiate working in parallel with the State Office to process non-routine or complex applications.

(2) Additional Information. For those applications to be processed in parallel, the Regional Office and the State Office will determine what, if any, additional information is necessary to complete or supplement the application. For all applications, the Regional Office will correspond with the applicant to obtain the additional information, obtain watermaster recommendation as described below, and perform any field review that is also necessary in coordination with staff from the

Adjudication Bureau if the water right is claimed in a pending adjudication.

(3) Administrative, Hydrologic, and Legal Review. For those applications to be processed in parallel, the Regional and State Offices will complete a review of all information submitted, in coordination with the Adjudication Bureau as needed, and forward appropriate information to the Hydrology Section and Administration for additional hydrologic, policy, and legal review as necessary.

(4) Preparation of Staff Memorandum. Once the review is complete, the Regional Office will prepare a memorandum, with the concurrence of the State Office if necessary for parallel review, that documents the review and evaluation of the sufficiency of the information submitted and whether processing of the application can continue because there is no clear inconsistency with the criteria set forth in Section 42-222, *Idaho Code*. If it is determined that processing of the application can continue, the Regional Office will complete necessary GIS descriptions, finalize data entry, and draft conditions for entry into Work Flow.

(5) Rejection or Denial of Application. If it is determined that the application for transfer should be rejected or can not be approved pursuant to Section 42-222, *Idaho Code*, the Regional Office or State Office (for parallel review) will prepare and issue a preliminary order rejecting or denying the application. An application for transfer may be rejected if the applicant fails to provide additional or adequate information pursuant to the requirements in this Section 5. An application for transfer that clearly does not satisfy the criteria set forth in Section 42-222, *Idaho Code*, must be denied. A rejected application may be re-filed when adequate information can be provided; a denied application can not generally be re-filed for substantially the same proposed transfer, unless a showing is made that substantial changes have subsequently occurred such that the criteria set forth in Section 42-222, *Idaho Code*, can potentially be satisfied. In either case, application fees will be retained. Note that notice of a rejected or denied application shall be sent to the applicant by certified mail pursuant to Section 42-222, *Idaho Code*.

(6) Applicant Contest of Rejection or Denial. If the applicant contests the preliminary order rejecting or denying the application and requests a hearing pursuant to Section 42-1701A, *Idaho Code*, the Regional Office will publish notice of the application for transfer pursuant to Section 42-222, *Idaho Code*, including notice of the contested case, and provide opportunity to protest the application and intervene in the contested case unless published notice is not required for the application as described below.

(7) Public Notice. If it is determined that processing of the application can continue consistent with the criteria set forth in Section 42-222, *Idaho Code*, the Regional Office will publish notice of the application for transfer. In some cases, published notice of the application may not be required. Pursuant to Section 42-222, *Idaho Code*, the Department has discretion to provide notice as deemed appropriate for applications proposing to change only the point of diversion or place of use in a manner that will not change the effect on the original or hydraulically-connected source or affect other water rights.

The timing of the public notice in these steps should remain flexible in order to streamline or expedite processing of the application. For example, processing time may be reduced by preparation of draft documents during the notice period. However, notice should not be provided prior to determining that the application meets the minimum requirements described in Section 3 and that there is a clear understanding by staff regarding the purpose of the transfer. Premature notice could result in the requirement to republish notice due to changes to an application or could result in unnecessary publication costs where an application is likely to be rejected or denied.

(8) Preparation of Approval Document. If no protest to the application for transfer is filed under step (7) above, or all protests filed are withdrawn prior to hearing, the Regional Office will finalize an electronic approval document and issue an approved transfer, subject to appropriate conditions, as a preliminary order and complete data updates in Work Flow. For those applications processed in parallel, the Regional office will finalize an electronic approval document and forward the document to the State Office for final approval and data updates.

(9) Contested Case Proceedings. If protest to the application for transfer is filed under either step (6) or (7) above, a contested case process will be completed. The hearing officer will forward electronically any final order that results from the contested case to appropriate staff to complete data updates in Work Flow.

Gathering Information Needed for Processing. In completing the steps outlined above, additional information may be needed for clarification of the purpose and intent of the proposed change, to further document the information on the application, or to provide a sufficient basis for determining whether the proposed change satisfies the statutory criteria for approval. **The applicant bears the burden of providing sufficient information.** However, staff should locate and assemble information available in the department's records that does not require compilation, interpretation, or analysis by an engineer, geologist, or other technical specialist.

Requests for Additional Information. Correspondence shall be prepared requesting any additional information needed and providing a reasonable period of time for response

(generally 30 days). When additional information is requested from the applicant, the applicant shall be informed of the need for a timely response to avoid delays in processing. The applicant shall also be informed that the application may be rejected if the additional information requested from the applicant is not timely received or is inadequate. The department can grant additional time to submit the required information if the applicant submits a written request for additional time and sufficient justification is provided.

Watermaster Recommendation. Section 42-222, *Idaho Code*, requires that the department shall advise the watermaster of any water district in which the water is used of any proposed change. The department shall not take final action on an application for transfer until the watermaster's recommendation has been received and considered.

Delays or non-response from watermasters results in delays in processing applications. The watermaster shall be informed that a non-response will be considered by the department to be the watermaster's recommendation not objecting to approval of the proposed transfer. Department staff should ensure that all watermasters understand their responsibility to provide recommendations.

Staff to Exercise Judgment. **Department staff has discretion to adapt the requirements set forth herein according to the nature and complexity of a proposed transfer**. While it is important that the information and documentation requirements are consistently applied, **staff is to use sound judgment to avoid asking the applicant for unnecessary information or seeking unnecessary review and comment from other state or local governmental entities as these guidelines are applied**.

5a. Evaluation of Authority to File an Application for Transfer.

(1) Presumption Based Upon Department Ownership Records. For any application for transfer, the department must have sufficient information to determine that the applicant has the authority to seek the proposed change in use of the water right(s). The department can presume, absent information to the contrary, that the applicant is the owner of the right(s) if the department's ownership records maintained pursuant to Sections 42-248 or 42-1409(6), *Idaho Code*, list the applicant as the current owner. The department may need to seek documentation regarding ownership if there is reason to believe that the department's ownership records may be inaccurate. One situation where the department's records may not confirm current ownership is described below.

A transfer application filed to change a right (or part thereof) claimed in a pending adjudication, where the claimed place of use is based on an accomplished transfer pursuant to Section 42-1425, *Idaho Code*, must include adequate documentation demonstrating the applicant's ownership of the right or authority to make the change.

(2) Other Acceptable Documentation. If the applicant's name does not match the name in the department's records for the current owner of the right(s) sought to be transferred, the applicant must provide evidence of current ownership or authority to make the proposed change(s). Adequate documentation can be a warranty or other deed, title policy, contract of sale or option for purchase by applicant (if contract or option allows the transfer), or other similar document confirming ownership of the water right(s) or the authority to change the water right. See Records Memorandum No. 9 for additional guidance on water right ownership documentation.

(3) Applicant Does Not Own New Place of Use. If the application for transfer proposes to change the place of use authorized under the water right(s), and the applicant does not own the land at the proposed new place of use, then the applicant must provide documentation that authorizes the change on behalf of the current owner of the proposed new place of use, except when the applicant is a municipal provider, irrigation district, canal company, or other similar entity. Such entities may only need to provide evidence of their authority to provide water for the proposed place of use in instances where evidence of such authority is necessary.

(4) Conditions on Associated Rights. If an application for transfer proposes a change from or to a system where there is an associated water right that is not listed on the application as a right being transferred, a change to conditions for that right is required (other than changes to conditions resulting from an ownership split), and that right is not owned by the applicant, then the applicant must provide documentation authorizing the change on behalf of the current owner of the associated right.

(5) Authority to Sign on Behalf of an Applicant. If the application for transfer is signed by someone other than the applicant(s) as listed on the application, documentation is needed to establish that the signatory is a representative of the applicant and is authorized to sign on the applicant's behalf. The documentation can be a copy of a current "power of attorney" authorizing signature on behalf of the applicant, or other similar documentation. An application could also be signed by an officer of a corporation or company, an elected official of a municipality, or any individual authorized by an organization to sign the application for a corporation, company, or municipality (if accompanied by documentation confirming authorization). The signatory's title must be shown with the signature.

(6) Corporation, Partnership, Joint Venture, Association, or other Business Entity. If the application for transfer is in the name of a corporation,

partnership, joint venture, association, or other business entity, department staff must verify that the organization is a viable and legally recognizable entity. Department staff will conduct a Business Entity Search at the Idaho Secretary of State's website: http://www.sos.idaho.gov/. If the Business Entity Search does not confirm that the corporation, partnership, joint venture, association, or other business entity is properly registered in the State of Idaho, department staff will request further clarification from the applicant. The intent of this search is to ensure that the organization is properly identified, including identification of individuals with signature authority and responsibility to conduct the organization's activity. Department staff may utilize other available resources to obtain the necessary information.

(7) Approval of Irrigation Entity or Legislature. Section 42-108, *Idaho Code*, requires that if the right(s), diversion works, or irrigation system is represented by shares in a corporation, or owned by an irrigation district, no change can be made without the consent of such corporation or irrigation district. This includes the use of such right(s), diversion works, or irrigation system for mitigation purposes related to a proposed transfer. Any permanent or temporary change in period of use or nature of use, in or out-of-state, involving a quantity of water greater than fifty (50) cfs or a storage volume greater than five thousand (5,000) acre-feet must also be approved by the legislature if approved by the department, except that any temporary change within the State of Idaho for a period of less than three (3) years does not require legislative approval.

(8) Liens, Mortgages, or Contract Restrictions. The department is required to provide notice to the holder of a security interest in any water right(s) proposed to be changed if the security interest holder has filed a request for notice pursuant to Section 42-248(6), *Idaho Code*. If the transfer proposes a change that might impact the value of the land such as moving the place of use or diversion facility to other land or changing the nature of use and the land from which the water right is proposed to be transferred is subject to liens, mortgages, or other contract restrictions affecting the right to transfer the water, a notarized statement or a statement on official letterhead signed by an authorized representative of a mortgage company or similar entity is required from the holder of each such lien, mortgage, or contract (see Transfer Processing Memorandum No. 10).

(9) Municipal Provider. If an application for transfer proposes to change the nature of use of a water right to municipal purposes in the name of a municipal provider for reasonably anticipated future needs, the applicant must provide documentation to establish its qualifications as a municipal provider as defined in Section 42-202B, *Idaho Code.*

(10) Agreement not to Divert. The applicant must describe any agreement or commitment not to divert water under the right(s) proposed for transfer such as a lease to the water supply bank (WSB), enrollment in the federal Conservation Reserve Enhancement Program (CREP) or dedication of the right for mitigation purposes.

5b. Evaluation of Water Right Validity.

For any application for transfer, the department must determine the validity of the water right(s), or part thereof, proposed to be changed. The following factors must be considered when processing an application for transfer and may require additional information from the applicant.

(1) Department Records. For any application for transfer, the department must determine that a right, or part thereof, proposed to be transferred is valid and has not been lost by forfeiture or partial forfeiture. The department will presume, absent other information indicating forfeiture, that the right has not been forfeited if the department's water measurement records, aerial photography, remote sensing, or other information, shows use of water during the previous, consecutive, five-year period. The department will also presume that the right has not been forfeited when it is claimed in a pending adjudication or initially decreed in an adjudication within the previous five-year period. If staff makes a field inspection (all transfers seeking a change to a right evidenced only by a claim are to be field inspected or otherwise reviewed, see Transfer Processing Memorandum No. 1 as revised in Section 5b.(4) below), information must be gathered concerning the current status of diversion and delivery facilities and the apparent recent use of water.

(2) Other Acceptable Documentation. If the records available to the department do not establish that a right has been used within the previous, consecutive, five-year period (except as provided in (1) above or for a right held by a municipal provider for reasonably anticipated future needs pursuant to Section 42-223(2), *Idaho Code*), the applicant must be asked to provide written documentation demonstrating that the right has been used within that time period. Examples of appropriate documentation include power records for pumps used to divert water under the right, Farm Service Agency (FSA) crop production records, receipts or other evidence of expenditures or revenue from the use of water under the right, and adequate affidavits of objective persons having actual knowledge of the uses of water under the right. Alternatively, if the right has not been used within the previous, consecutive, five-year period, then the applicant must be asked to provide information showing that exceptions or defenses to forfeiture are applicable. Exceptions or defenses to forfeiture include those set

forth in Section 42-223, *Idaho Code*; extensions provided for in Section 42-222, *Idaho Code*; and case law relating to factors such as resumption of use, unavailability of water when needed, or non-use when other water is available. Note that filing an application for transfer does not toll the statutory period for forfeiture of a water right due to non-use.

(3) Validity of Unchanged Parts of a Water Right. For applications for transfer proposing to change part of a water right or rights, the remaining part(s) of the right(s) that are not involved in the proposed transfer are generally not subject to a finding of forfeiture as part of the transfer action by the department.[8] In addition, the remaining part(s) of the right(s) are generally not subject to any additional conditions beyond the requirements of the original right(s). However, in some circumstances, department staff may be required to perform a comprehensive forfeiture analysis for the remaining part(s) of the right(s) to determine if a transfer can be approved. For example, a transfer application proposing to change part of the irrigated acres within a permissible place of use may require a comprehensive review of all the acres within the permissible place of use to determine if there are sufficient acres available to be transferred. When there has not been a comprehensive forfeiture analysis performed for the remaining, unchanged part(s) of the right(s), a remark will be included for any remaining part(s) of the right(s) to indicate that an approved transfer does not confirm the validity of the remaining, unchanged part(s) of the right(s).

(4) Statutory or Beneficial Use Claims. Applications for transfer proposing to change a water right based on a statutory or beneficial use claim must be reviewed to determine the validity, priority date, and extent of beneficial use established under the claimed right. Review must include field verification or other means to verify the right. This memo effectively revises the means of verification as required in Transfer Processing Memorandum No. 1. In addition, the applicant must be asked to provide information confirming the priority date of the claim. Adjudication staff must also be consulted for questions regarding review of the priority date if the claim is filed in a pending adjudication. A transfer approval for the water right (or part thereof) based on a claim shall incorporate the department's findings regarding the validity of the right. If a statutory or beneficial use claim is the basis for a pending claim in an adjudication, adjudication staff shall be notified of the results of the validity review, and the claimant shall be informed of the findings.

[8] Section 42-350, Idaho Code provides a process for revocation of a license at any time after issuance of the license upon a finding by the Director that the water has not been put to beneficial use for a period of five years.

5c. Injury to Other Water Rights

For any application for transfer, the department must determine whether the proposed change will injure any other rights, whether junior or senior in priority to the right being changed. The following factors must be considered when processing a transfer and may require additional information from the applicant.

(1) Reduction in Quantity of Water Available to Other Water Rights. Whether the amount of water available under an existing water right, senior or junior in priority, will be reduced below the amount recorded by permit, license, decree, or valid claim, or the historical amount beneficially used by the right holder, whichever is less. Consideration of this factor may require an analysis of the timing and location of return flows both before and after a proposed change to determine if the change will reduce the supply available to other water rights.

(2) Rotation. Whether a proposed change in the point of diversion of a water right that has been delivered in rotation with delivery of other water rights will result in significant additional losses borne by the water rights remaining in rotation.

(3) Unreasonable Effort or Expense. Whether the holder of an existing water right will be forced to an unreasonable effort or expense to divert water under the existing water right.

Existing ground water rights are subject to reasonable pumping level provisions of Section 42-226, *Idaho Code*, as well as applicable court decisions (e.g., Parker v. Wallentine, 103 Idaho 506, 650 P.2d 648 (1982), regarding in part the obligation to pay increased costs to divert an existing right).

An application for transfer that is approved to provide alternate points of diversion from ground water under one or more municipal water rights to develop or expand a common delivery system shall include conditions of approval to identify the point(s) of diversion authorized under each right prior to the transfer. The purpose of the condition is to provide for future administration of water rights in situations where increased municipal pumping over time is determined to cause injury through interference with other nearby wells.

(4) Unusable Water Quality. Whether the quality of water available to the holder of an existing water right would be made unusable for the purposes of the existing right.

(5) Mitigation. Whether mitigation would be needed to prevent injury to an existing water right that would be injured otherwise.

Unless agreed to in writing by the holder of an existing right, the only mitigation that can be considered acceptable by the department is the provision of replacement water in the full amount of the injury, at the same time injury would otherwise occur, and of acceptable water quality at the point of diversion for the existing right.

For applications that propose to move the point of diversion for a water right to divert and use ground water from one location to another within the ESPA, including any modeled tributary aquifers, mitigation is required for transfer approval when all of the following conditions occur: (a) the transfer would result in increased depletions (transient or steady state) greater than 10%, to any hydraulically-connected reach of the Snake River; (b) the increased depletion (transient or steady state) to the reach is greater than 2 acre-feet per trimester; and (c) the depletion, at steady-state conditions, to the reach is greater than 10% of the total depletion to all reaches resulting from the diversion under the proposed transfer. When greater increases in such depletions would occur, acceptable mitigation includes reduction in the quantity of ground water diverted and depleted such that there is no increase in depletions (for transient-state increases, no more than 5 percent over pre-transfer depletions so long as de ficient mitigation is approximately equal to excess mitigation) for each hydraulically-connected reach of the Snake River requiring mitigation. When this form of mitigation is proposed, the quantity of ground water diverted may be increased periodically (no more frequently than annually) if supported by an analysis of the timing of calculated depletions (transient to steady-state) to reaches of the Snake River that are hydraulically-connected to the ESPA for the points of diversion both before and after the proposed transfer. However, the proposed schedule for increased diversions must be set forth in the application for transfer.[9] See Section 3(12) for additional guidance.

Increased reach gains from other proposed ESPA transfers (offsetting transfers) can be used to provide part or all of the mitigation necessary for reaches requiring mitigation due to increased depletions (as determined by a stand-alone analysis of each individual transfer as described above). If approved, the transfers will not require mutual dependence for ongoing mitigation. However, any approval issued on the basis of offsetting transfers shall include conditions of approval to address future changes back to the original point(s) of diversion or future changes to a new location. In addition, conditions of approval

[9] If the transfer is approved with mitigation by reducing the amount of ground water withdrawn, and as a result the reach gains to one or more other hydraulically-connected reaches of the Snake River increase, then the applicant shall retain the right to receive credit for the increased reach gains. Such credits can not currently be used because there is no administrative system in place to recognize such credits. In the event that an administrative system is created in the future whereby such credits available at that time can be recognized, the applicant shall retain the right to the possible future use of such credits, which shall be reflected in a condition of approval for the transfer.

shall be included to address changes that would result in increased impacts to reaches of the Snake River due to differences in priority date between the rights involved in the offsetting transfers. Such changes could result in injury to surface water rights in connected reaches of the Snake River in the event of a curtailment order affecting ground water rights in the ESPA. See the Department's August 13, 2007 memo entitled, "ESPA Transfer Spreadsheet Version 3.1 – Implementation and Use" for further guidance.

(6) Ground Water Management Area or Critical Ground Water Area. Whether the point of diversion for a ground water right would move from outside the boundaries of a critical ground water area (CGWA) or ground water management area (GWMA) to within the boundaries of a CGWA or GWMA, or whether the point of diversion would move from within the boundaries of a GWMA to within the boundaries of a CGWA.

An application for transfer proposing such a change in the location of the point of diversion for a ground water right is not approvable unless the applicant proposes acceptable mitigation to prevent injury to other water rights. For cold water (85° F or less) GWMAs over the ESPA, mitigation beyond that satisfying condition (4) above will not be required at this time as a condition of approval, unless injury would occur to a water right to divert ground water or injury would occur to a water right to divert surface water that has not been offset by stipulated agreement or through a mitigation plan approved by the department,

(7) Change of Source. Whether the source would be changed from ground water to surface water, or from surface water to ground water.

Section 42-222, *Idaho Code* does not provide for a change from a ground water to surface water source, or from a surface water to ground water source. An application for transfer proposing such a change in source is not approvable unless the ground water and surface water sources are so interconnected that they constitute the same source for purposes of a proposed change in point of diversion. The ground water and surface water sources must have a direct and immediate hydraulic connection (at least 50 percent depletion in original source from depletion at proposed point of diversion in one day). The existing point of diversion and proposed point of diversion must be proximate such that diversion and use of water from the proposed point of diversion would have substantially the same effect on the hydraulically-connected source as diversion and use of water from the original point of diversion. If such application for transfer is approved, the changed water right shall be administered no differently than any other water right from the surface water source. If approved, the source for a change from a surface water source to a ground water source should be listed as ground water tributary to the surface water source.

(8) Changing Aquifer Source. Whether a proposed change in point of diversion for a ground water right is from one aquifer to another aquifer.

An application for transfer proposing to change the point of diversion from one distinct aquifer to a totally separate aquifer is not approvable, just as an application for transfer proposing to change the point of diversion for a surface water right from one distinct surface water source to a totally separate surface water source is not approvable.

(9) Conveyance Losses. Whether the proposed change would move part or all of a right from a canal impacting conveyance losses associated with the delivery of multiple water rights in the canal.

If such application for transfer is otherwise approvable, the approval must require that the applicant retain an appropriate amount of water in the canal to prevent any additional reduction in the amount of water available from the canal to fill other water rights because of the portion of the conveyance losses that, prior to the transfer, were attributable to the right being transferred.

Additional Considerations. In addition to the considerations above, the following information may be needed to evaluate injury involving an application for transfer for a ground water right, depending on the specific circumstances of the proposed transfer. If the information is not available in the department's records, the applicant must provide the following information that department staff determines is necessary:

(1) Location of Nearby Wells. The location of the nearest production well, including domestic wells, to the proposed point of diversion, and if different, the nearest production well down gradient from the proposed point of diversion (the location of other nearby production wells may also be required);

(2) Location of Nearby Springs. The location of nearby springs from which water is diverted under existing rights, including domestic uses, that could be affected by ground water diversions from the proposed point of diversion;

(3) Ground Water Levels. The depth to water, the stability of ground water levels, or the stability of confined aquifer pressures, in the area of the proposed point of diversion; and

(4) Water-Bearing Zones. The depth and thickness of water-bearing zones, including identification of the zone or zones sought for the proposed use.

5d. Enlargement of Use

For any application for transfer, the department must determine whether the proposed change will enlarge the use of water under the water right(s). Enlargement will occur if the total diversion rate, annual diversion volume, or extent of beneficial use (except for nonconsumptive water rights), exceeds the amounts or beneficial use authorized under the water right(s) prior to the proposed transfer. The following factors must be considered when processing an application for transfer, which may require that additional information be provided by the applicant:

(1) Diversion Rate, Annual Diversion Volume, and Number of Acres Licensed or Decreed. The authorized diversion rate, annual diversion volume (ground water rights only and certain surface water rights), and number of acres authorized for irrigation (if applicable), as licensed or decreed for the water right, shall not be increased. If the annual diversion volume is not specifically stated on the license or decree for a ground water right, then the amount will be based on the most current standards adopted by the department unless the applicant can show a larger amount has been reasonably diverted and beneficially used.

(2) Beneficial Use. An application for transfer proposing to change the place of use or nature of use for all or part of a water right or water rights, which change would not result in an equivalent reduction in beneficial use under the original right(s), will be presumed to enlarge the water right(s). For example, hydropower use cannot be added to a right used for irrigation, even though no additional water would be diverted for the hydropower use. The irrigation use, or part thereof, could be changed to hydropower use by reducing the irrigation use by an equivalent amount, or the new use could be provided without reducing the irrigation use by obtaining a new permit to appropriate water for hydropower use.

(3) Stacked Water Rights. Water rights are "stacked" when two or more water rights, generally of different priorities and often from different sources, are used for the same use and overlie the same place of use. Water rights for irrigating a permissible place of use are not necessarily stacked when the water rights in total provide for irrigating up to the maximum acreage authorized within a permissible place of use. An application for transfer proposing to "unstack" one or more water rights used for irrigation or other use, without changing all the rights for the same use, is presumed to enlarge the water right. However, the place of use for a supplemental irrigation right may be changed for continued use as a supplemental irrigation right at a different place of use without, by definition, enlarging the original right or the supplemental right proposed for transfer, so long as the primary rights at the original and proposed places of use provide comparable water supplies. In other words, use of the supplemental right at the proposed place of use can

not materially exceed use of the supplemental right at the current place of use.

(4) Changing Supplemental Right to Primary Water Right. A supplemental irrigation right is a stacked water right authorizing the diversion of water for irrigation from a secondary source to provide a full supply for crops when used in combination with a primary right. A supplemental right can provide additional water in conjunction with a primary source, or at times when the primary source is unavailable. The use of a supplemental right is dependent on the supply available under the associated primary right and can be highly variable from year to year. An application for transfer proposing to change a supplemental irrigation right to a use as a primary water right for irrigation or other use will be presumed to enlarge the supplemental right. An exception is when the applicant can clearly demonstrate, using historic diversion records for the supplemental right as described in (5) below, or other convincing water use information, that there would be no enlargement of the water right being changed or other related water rights. Evidence of the quantity of water beneficially used under the primary right must be accompanied by some evidence of the quantity of water used under the supplemental right to qualify as "convincing water use information." The supplemental right must have been used on a regular basis (used more than 50 percent of the time). Insufficient data will be grounds to reject the application because the department will not be able to ascertain if the right will be enlarged.

If an application proposes to change only a portion of a supplemental irrigation right to a use as a primary water right, the application is not approvable unless the extent of beneficial use under all associated rights prior to the transfer will be proportionately reduced or transferred to another place of use to avoid enlargement of the remaining portion of the supplemental right. The associated right(s) will not need to be reduced if the entire supplemental right will be changed through the transfer.

A general exception to the presumption of enlargement when changing a supplemental right to a primary right applies when the supplemental right is a storage right. Section 42-222(1), *Idaho Code*, provides that a transfer of a water right for the use of stored water for irrigation purposes does not constitute an enlargement in the use of the original water right, even when more acres are irrigated, provided that no other water rights are injured.

(5) Historic Beneficial Use. For an application for transfer seeking to change the nature or purpose of use, or season of use, including for a supplemental water right, the historic extent of beneficial use under the right must not be enlarged. The extent of historic beneficial use may

also have to be considered for other proposed changes in the place of use under some circumstances when there are other sources of water, such as natural subirrigation, even when the purpose of use or period of use are not proposed to be changed. For a transfer seeking to change a water right for irrigation, the consumptive water use based on the cropping pattern or rotation, or estimated from records of water diverted and system efficiency, for the most recent, five consecutive years is presumed to provide a reasonable basis to establish historic use under the water right proposed for transfer, unless information provided by the applicant supports using a longer historic period. Exceptions or defenses to forfeiture may also justify extending the time period considered in establishing the historic use prior to the proposed transfer. The highest-year historic consumptive use (i.e. highest-use crop rotation using a climatic average for crop water use estimates), except for supplemental rights, will be the basis for the annual volume of consumptive use available for transfer. When it is necessary to determine the historic consumptive use under a supplemental right, the average annual historic consumptive use, over an appropriately representative time period not less than five years but that may require greater than five years, will be the basis for the volume available for transfer. For supplemental irrigation rights, a representative time period will include years with both good and bad surface water supplies for the area. In some rare instances, the diversion rate, the annual diversion volume, and season of use could also be limited based on the extent of historic use.

For an application for transfer seeking to change the place of use under a supplemental water right for use in conjunction with a different primary right, the historic extent of beneficial use under the right must not be enlarged. For such changes, information regarding the historic availability or reliability of supply of the rights being supplemented (primary rights), both before and after the proposed change, is presumed to provide a reasonable basis to establish historic use under the supplemental right proposed for transfer.

(6) Period of Use. An application for transfer, which proposes an increased period of use in connection with a changed nature of use for ground water, is presumed not to be an enlargement in use if the rate of diversion, total annual volume diverted, and annual volume of consumptive use are not increased. However, a change to an increased period of use for a surface water right is presumed to be an enlargement and would cause injury where there are junior priority rights that rely on surface water during the time period outside of the historic period of use for the right proposed to be changed.

(7) Confined Animal Feeding Operations. For the purpose of quantifying the amount of water needed or used in connection with a confined

animal feeding operation, such as a feedlot or dairy, the water use will be considered fully (100 percent) consumptive.

(8) Fish Propagation. An application for transfer, which proposes to increase the number or volume of raceways in a fish propagation facility, will not be presumed to be an enlargement of the water right, unless the diversion rate or annual volume of water diverted are proposed to be increased.

(9) Disposal of Waste Water. An application for transfer filed to provide for the disposal of wastewater, by land application on cultivated fields or other beneficial use disposing of the wastewater, resulting from use of water under non-irrigation uses such as a dairy or other confined animal feeding operation, or "municipal" or "industrial" water rights where the use of water is considered to be fully consumptive, is not considered an enlargement of the commercial, municipal, or industrial water right. While not an enlargement of the water right, such use of wastewater must not injure other water rights (see Application Processing Memorandum No. 61 as revised under Section 1 of this memorandum) and must comply with best management practices required by the Idaho Department of Environmental Quality, the U. S. Environmental Protection Agency, or other state or federal agency having regulatory jurisdiction.

(10) Enhanced Water Supply. An application for transfer, which proposes to change a point of diversion from a surface water source to a new location where the water available is greater or more reliable, such as moving from the tributary of a stream downstream to the mainstem of the stream, is presumed to enlarge the water right, unless the proposed change is subject to conditions limiting diversion of water at the proposed new point of diversion to times when water is available and in priority at the original point of diversion.

(11) Water Held for Reasonably Anticipated Future Needs. Section 42-222, *Idaho Code*, provides that when a water right, or part thereof, to be changed is held by a municipal provider for municipal purposes, that portion of the right held for reasonably anticipated future needs can not be changed to a new place of use outside the service area of the municipal provider or to a new nature of use. See Section 42-202B, *Idaho Code* for applicable definitions related to municipal water use.

(12) Changing the Purpose of Use for a Water Right to Municipal Purposes. An application for transfer, which proposes to convey an established water right to a municipal provider and change the nature of use to municipal purposes, as defined in Section 42-202B, *Idaho Code*, shall not be approved without limiting the volume of water divertible under the right to the historic consumptive use under the water right prior to the

proposed change. If the proposed transfer involves a surface water right, the transfer shall not be approved without also limiting the right to the historic period of use under the right prior to the proposed change.

(13) Historic Use Recognized for Municipal Purposes. An application for transfer, which proposes to change the nature of use to municipal purposes for a water right established and held by a municipality that lists the purpose(s) of use as some combination of domestic, commercial, industrial, or irrigation, where those uses have historically been essentially for municipal purposes, as defined in Section 42-202B, *Idaho Code*, will not be presumed to be an enlargement of the right and will not require limitation to the historic consumptive use under the right. However, the change will be subject to the annual diversion volume, if specifically stated on the water right license or decree.

(14) Stored Water. Section 42-222(1), *Idaho Code*, provides that a transfer of a water right for the use of stored water for irrigation purposes does not constitute an enlargement in the use of the original water right, even when more acres are irrigated, provided that no other water rights are injured.

(15) Conveyance Losses. An application for transfer, which proposes to change the purpose of use for a portion of a water right covering conveyance losses to a use that would provide for irrigating additional acres, or other additional use, is presumed to be an enlargement of the water right.

(16) Measuring Requirements for Ground Water Diversions in the ESPA and Modeled Tributaries. Any water right transfer authorizing one or more changes to the diversion and use of ground water approved subsequent to the date of this memorandum shall include a condition of approval that requires the installation and maintenance of one or more measuring devices or means of measurement approved by the department. Until and unless changed pursuant to Section 42-701, *Idaho Code*, the following flow meter installation is required for the transferred right prior to diverting and using ground water under the transferred right:

a. One or more magnetic flow meters shall be installed, as required by the department, having an accuracy of 0.5 percent of rate of flow for flow velocities between 0.1 and 33 ft/sec in pipe sizes up to 4 inches in diameter and for flow velocities between 0.1 and 20 ft/sec in pipe sizes greater than 4 inches in diameter;

b. Each magnetic flow meter must be installed and maintained in accordance with the manufacture's specifications and

equipped with an LCD backlit display unit that displays instantaneous flow rate and total volume of water diverted in accordance with the department's requirements;

c. Each magnetic flow meter must provide analog output for flow rate, scaled pulse frequency for total volume of water diverted, and an RS232 port for communications.

In any transfer approval, the department may require, prior to diversion under the approved transfer, that each magnetic flow meter must be equipped with a data logger specified by the department and capable of storing 120 days of data including dates and cumulative volume of ground water diverted updated daily, as a minimum. If installation of a data logger is not required at the time of transfer approval, the department will condition the transfer approval that installation of a data logger may be required in the future.

Detailed specifications for the above requirements will be provided by the Water Distribution Section of the department upon request. A municipal provider subject to other measurement provisions that satisfy the department's measuring and reporting requirements are exempt from the above condition. Wells used solely for domestic use as defined under Section 42-111, *Idaho Code* or stockwater use under Section 42-1401A, *Idaho Code* are also exempt from the above condition. Water use for domestic and/or stockwater purposes in addition to any other purpose (e.g. commercial use) in a common system is not exempt from the above condition. Holders of ground water rights seeking approval of a transfer for diversion through existing systems or for irrigation systems m ay request a variance from the above requirements (at any time before or after approval), which may or may not be granted.

5e. Local Public Interest

For any application for transfer, the department must consider whether the proposed change(s) are in the local public interest as defined in Section 42-202B(3), *Idaho Code*. Consistent with earlier guidance herein regarding use of discretion and sound judgment, department staff is to address pertinent items from the following list, as well as other issues that are pertinent to specific circumstances, in considering whether sufficient information has been provided regarding local public interest issues and effects on the public water resource. When there are one or more significant questions about whether a particular transfer would be in the local public interest, additional information from the applicant or comments from other state or local governmental entities that have germane expertise on local public interest issues must be sought. In most cases, the applicant should gather the information and submit it to the department rather than department staff sending a form letter to other agencies seeking comment, unless the

local agency requests direct contact with the department. Staff should inform the applicant of their responsibility to provide the information to the department.

(1) Recreation, Fish, and Wildlife Impacts. The effect the proposed transfer could have on the public water resource in relation to recreation, fish, and wildlife resources in the local area that would be affected by the proposed change (Transfer Processing Memoranda Nos. 19 and 21 provide guidance related to state protected river reaches and minimum stream flow reaches);

(2) Water, and Hazardous Substance Standards. Whether the proposed transfer would comply with applicable water and hazardous substance standards designed to protect the public water resource;

(3) Local and State Requirements. Whether the proposed transfer would comply with local government and state government, if any, planning and zoning ordinances, regulations, records of decisions, or policies affecting the public water resource (e.g. requirement of a local government to use surface water for irrigation for developments involving land use changes pursuant to Section 67-6537, *Idaho Code* is considered an expression of local public interest);

(4) Neighboring Jurisdictions. Whether the proposed transfer would comply with existing requirements for land use and other uses of natural resources affecting the public water resource, if any, adjacent to the place of use proposed by the transfer but beyond the jurisdiction of the local government having authority or control over the proposed place of use; and

(5) State Water Plan. Whether the proposed transfer would be compatible with the objectives and policies of the State Water Plan pertaining to the local public interest.

5f. Beneficial Use and Conservation of Water Resources

For any application for transfer, the department must consider whether the proposed use of water is a beneficial use consistent with the conservation of water resources within the State of Idaho. The following factors must be considered when processing a transfer and may require additional information from the applicant:

(1) Efficiency of Diversion and Use. Whether the water delivery and distribution/application systems for the use proposed by the transfer would be consistent with contemporary standards for reasonably efficient use of water.

(2) Diversion Rates for Irrigation Use. Whether the proposed transfer, if involving irrigation, proposes a diversion rate in excess of 0.02 cfs per

acre of land irrigated (see Section 42-220, *Idaho Code*), and if the application for transfer proposes a higher diversion rate, whether the higher rate would be justified based on soils, crop types, irrigation system, climate, and reasonable conveyance losses from the point of diversion to the place of use. A higher diversion rate may also be justified for irrigating lands that because of public access can only be irrigated during certain times of the day (see Application Processing Memorandum No. 60). For the irrigation of five acres or less, justification is not necessary for a diversion rate of up to 0.03 cfs per acre (see Application Processing Memorandum No. 17). If the right proposed for transfer is based on a decree or license authorizing a diversion rate greater than 0.02 cfs per acre, then additional justification is not necessary unless:

a. The proposed transfer would change the place of use to a new place of use, rather than simply rearranging acreage at the general location of the existing place of use;

b. The proposed transfer would change the point of diversion with the intent to abandon the existing conveyance system and replace it with a new conveyance system that would reduce conveyance losses; or

c. The proposed transfer would add additional rights to an existing place of use from the same source as the existing water right(s) at the place of use.

(3) State Water Plan. Whether the proposed transfer would be compatible with the objectives and policies of the State Water Plan pertaining to beneficial use and conservation of water resources.

5g. Effect on Economy of Local Area

In the case where the proposed place of use is outside of the watershed or local area where the source of water originates, the department must consider whether the overall effects of the change proposed by the transfer would adversely impact the economy of the watershed or local area. The economic effect of the proposed transfer should be measured by assessing the following factors resulting from the change in use of water:

(1) Changes in Employment. Estimated changes in current and projected short-term and long-term employment;

(2) Changes in Economic Activity. Estimated changes to short-term and long-term changes in economic activity; and

(3) Stability of Economic Activity.

5h. Effect on Agricultural Base of the Local Area

Section 42-222(1), *Idaho Code*, provides that a change in nature of use from agricultural use shall not be approved if it would significantly affect the agricultural base of the local area. Department staff should presume the phrase "change in nature of use from agricultural use" can only be significant if the application for transfer proposes a change in nature of use for irrigation rights. Other water rights may authorize use in a process that is related to agriculture, such as commercial use for a dairy or an industrial use for a potato processing plant, but these uses are usually small enough compared to irrigation uses that a proposed change in these uses is presumed to not be significant. It is possible that a change in nature of use of a fish propagation water right authorizing diversion of a large flow rate might invoke this provision if fish propagation is interpreted to be an agricultural use.

The boundaries of the "local area" may be determined by considering one or any combination of the following:

(1) the boundaries of local government or the combined boundaries of local governments that cooperatively share plans for transportation, recreation, environmental quality, and similar water uses;

(2) the boundaries of any taxing entities or districts created, including school districts, that rely directly upon tax receipts for businesses that might be affected by a reduction in agricultural production;

(3) areas of common socio-economic values and operations, including those created by a) water delivery entities, b) similar agricultural crops grown, or c) the areas where agricultural processing facilities derive the agricultural products processed, or;

(4) natural geographic features that separate various areas, particularly hydrologic basin separations.

Whether the change would significantly affect the local agricultural base may be determined by considering one or any of the following factors:

(1) Financial Impacts on Local Governments. The financial impact the change will have on local governments, combinations of local governments, taxing entities, or districts within the local area that derived income from the agricultural use;

(2) Financial Impacts on Others. The financial impact the change will have on water delivery entities, the ability of farmers to continue to grow and harvest the crops previously grown, and the ability of processors of agricultural products to obtain the products necessary for business viability;

(3) Agricultural Job Displacement. The degree to which those working in agriculture will be displaced or will lose income resulting from the proposed change;

(4) Agrarian Lands. The degree to which agrarian lands are taken out of production; or

(5) Financial Impact on Overall Economy. The financial impact on the overall agricultural economy of a local area.

ADMINISTRATOR'S MEMORANDUM

Application Processing Memo No. 68
Transfer Processing Memo No. 25

To: Regional Offices
Water Allocation Bureau

From: L. Glen Saxton

Re: **CONDITIONAL PROTEST WITHDRAWAL FOR RESOLUTION OF A CONTESTED APPLICATION**

Date: July 29, 2003

The purpose of this memorandum is to provide guidance to Department staff regarding the procedure to be followed upon receipt of a conditional withdrawal of a protest to a water right application.

Protests to water right applications are often resolved through stipulated agreement resulting from negotiations between parties. In some cases, an agreement between parties includes a statement that the protest is withdrawn provided the Department includes specific language as conditions of approval of the water right application. Sometimes, however, the stipulations proposed in the "conditional" withdrawals are not acceptable to the Department for a variety of reasons. Department Rule of Procedure 612 provides that "When a settlement is presented to the presiding officer, the presiding officer will prescribe procedures appropriate to the nature of the settlement to consider the settlement."

The Department should encourage settlement of contested cases through informal means and should make every effort to facilitate such settlements. To increase the likelihood that the settlement agreement will be acceptable to the Department, staff that conduct pre-hearing conferences should advise the parties that proposed settlement conditions may be considered unacceptable if the conditions are:

- Contrary to law or rules of the Department
- Outside Department jurisdiction
- Unreasonably burdensome upon the Department including staff time and Department resources
- Inconsistent with Department policy
- Inconsistent with proper management of the water resource or orderly administration of water rights
- Unclear or ambiguous meaning or intent.

Instruction should be provided at the conference stage before negotiations commence, if possible, and parties should be informed that this guidance does not prohibit or limit settlement agreements between the parties separate from requirements of the Department.

If a conditional protest withdrawal proposes settlement conditions to be applied to an approval, the Department must determine if the conditions are appropriate prior to determining that a protest is withdrawn. Regional Managers facilitating protest resolutions have broad discretion to determine the acceptability of proposed conditions but in some questionable cases, may want to seek legal or administrative review.

If the settlement conditions are determined to be unacceptable, the Department should prepare a letter to inform the parties that the conditional protest withdrawal is not acceptable and should list the reasons why the conditions cannot be accepted. The letter should also inform the parties that the protests will not be considered by the Department as withdrawn, that the pending application remains an active contested case before the Department, and that the parties have further opportunity to resolve the contested matter through continued negotiations.

If the settlement conditions are determined to be acceptable, and the application is otherwise approvable, the Department should acknowledge receipt of the conditional withdrawal of protest. The acknowledgement letter should inform the parties that the Department may modify the conditions as written to fit the approval format or may substitute a standard condition of the Department with essentially the same language and intent. Minor revisions can be made to help clarify certain references within a condition such as the addition of water right or transfer numbers, and well or other diversion locations. Standard conditions of the Department may be used to accommodate data entry and help avoid conflicting interpretations by Water Masters, Department staff and other water users. However, in preparation of an approval document, Department staff should not modify or replace specific language that relates only to interaction of the parties or the factual circumstances unless a change is necessary to prevent conflicting interpretations. In such cases, or in cases where acceptability is questionable, State office staff should consult with the Regional Manager and other staff who facilitated the protest resolution and, if significant changes appear to be warranted, the Department should notify the parties in writing of the changes or concern, prior to issuance of an approval. If a party objects in writing to the proposed changes, IDWR will inform the parties that the protest is not considered withdrawn, that the pending application remains an active contested case before the Department, and that the parties have further opportunity to resolve the contested matter through continued negotiations.

When multiple parties protest an application, one or more of the parties may withdraw their protests prior to hearing. If a withdrawal of protest agreement does not resolve the entire contested case, failure to determine acceptability of proposed condition language at the time of withdrawal could result in a later rejection of the proposed language after the dispute between the other parties is resolved. Conditional language proposed in a withdrawal agreement between the applicant and less than all of the protestants should be reviewed prior to hearing on the matter and a letter issued stating whether the proposed language would be acceptable to IDWR if the application is ultimately approved. Care should

be exercised in issuing the letter, however, if, by finding the proposed condition to be acceptable, IDWR might be viewed as having predetermined the outcome of the contested case.

Approvals are issued as preliminary orders of the Department and also must be provided to all parties involved in the conditional withdrawals. Parties can petition for reconsideration of a preliminary order for any reason, including disagreement with the conditions of approval, if any were modified, substituted or added by the Department.

This guidance does not limit or prohibit the use of settlement agreements that do not impose conditions on the approval. In such cases, the existence of an agreement can be recognized with a standard condition of the Department as follows:

> The diversion and use of water described in Transfer <00000> may be subject to additional conditions and limitations agreed to by the protestant(s) and the right holder under a separate agreement to which the Department is not a party and which may be enforceable by a court of law.

ADMINISTRATOR'S MEMORANDUM

Transfer Processing Memo No. 26

To: Regional Offices
Water Allocation Bureau

From: L. Glen Saxton

Re: **CONSUMPTIVE USE FOR PONDS**

Date: February 23, 2004

The attached memo and calculations provide an estimate of the annual volume of consumptive use associated with evaporation due to development of ponds. Based on the results of the analysis, the annual volume of consumptive use associated with evaporation from ponds can be considered equivalent to the mean annual consumptive irrigation requirement (CIR) for alfalfa hay.

A transfer application proposing to change the nature of use from irrigation to pond use will not require a detailed analysis to compare the historic beneficial use for the irrigation use to the consumption due to evaporation for the proposed pond use; instead, except as noted below, a one to one exchange for irrigated land vs. pond surface area will be considered acceptable. This simplification should only be considered applicable for irrigated land that is reasonably productive cropland where alfalfa hay (or in some cases, a productive stand of grass pasture/hay) has likely been grown historically. In cases where the productivity of the irrigated land is questionable, the applicant should provide an estimate of historical CIR for the irrigated land to establish the extent of beneficial use available for transfer.

This memo is not intended to prohibit applicants from providing their own analyses to estimate the consumptive use for ponds. If applicants choose to provide their own analyses, they should justify any significant differences between their analyses and the analysis provided on the attached memo.

It is important to note that the one to one exchange for irrigated land vs. pond surface area only addresses the consumption of water due to evaporation for the proposed pond use. It does not address any additional quantity of water, consumptive or otherwise, that may be associated with the development of ponds. A transfer proposing to change the nature of use of a water right to pond use must not enlarge the original use by total diversion rate or volume, including consumptive volume. The transfer application (or associated application for permit) must provide for the total quantity associated with the pond development. Such quantities may include the following, in addition to evaporation from a pond:

- water required to fill a pond
- maintenance of the water level in a pond due to seepage losses
- flow-through water for maintenance of water quality or temperature in a pond
- other water use(s) from a pond (e.g. stockwater)

MEMORANDUM

Date: February 6, 2004

To: File

From: Jeff Peppersack

Re: Consumptive Use for Ponds and Calculations to Determine the Number of Irrigated Acres to Dry Up for a Transfer to Change the Nature of Use from Irrigation to Pond Use

Development of ponds will expose water to evaporation. The consumptive use under a water right authorizing pond use can be determined by estimating the amount of water evaporated from a pond that exceeds the amount already evaporating or evapotranspirating naturally from the land surface in native state.

Estimation of annual evaporation or evapotranspiration from the land surface in native state involves some uncertainties, but can be simplified by considering published mean precipitation and free water surface evaporation rates on a monthly basis. During the non-growing season, evapotranspiration rates will not apply and evaporation from the land surface will occur minimally, and not greater than the free water surface evaporation rate. If it is assumed that the land surface is sufficiently moist during the non-growing season, then evaporation from the land surface may approach the levels of free water surface evaporation. This assumption will likely result in an overestimate, but since evaporation is minimal during the non-growing season, the simplification is acceptable.

During the growing season, estimation of evaporation and/or evapotranspiration from the land surface in native state is limited to the amount of precipitation that occurs. There is likely little deep percolation or runoff due to precipitation during the growing season (for semi-arid lands in Idaho), so the mean precipitation rate can be used as an estimate. Note that soil moisture carryover from the non-growing season and soil moisture due to a high ground water table are not considered in this discussion; they are also not generally considered for published consumptive irrigation requirement rates for crops.

Based on the assumptions noted above, the consumptive use under a water right authorizing pond use can be estimated by considering the mean free water surface evaporation on a monthly basis, and subtracting mean monthly precipitation. Precipitation is subtracted because it is assumed to be the amount that already evaporates or evapotranspirates naturally from the land surface in native state. During the non-growing season, the precipitation can only be subtracted to the extent of the free water surface evaporation rate (excess precipitation during the non-growing season will likely percolate into the soil or run off the land surface). The resultant consumptive use for the non-growing season will generally be zero. The attached analysis provides an example of the calculations.

For a transfer changing the nature of use from irrigation to pond use, the annual volume of water consumed is generally the limiting factor. The consumptive use for irrigation diversions must be compared to the consumptive use for ponds. The mean

consumptive use rate for irrigation diversions has been estimated by Allen and Brockway (1983) and is defined as the crop evapotranspiration rate minus effective precipitation.

The example calculations assume that the irrigated cropland included alfalfa hay at some time during normal crop rotations. Alfalfa hay is considered one of the highest water consumptive crops in the state (in some areas, a productive stand of grass pasture/hay is similar in water consumption). Based on the assumption, it can be seen that the number of irrigated acres necessary to dry up to change the nature of use to year-round pond use is roughly a one to one swap. In general, it can be considered sufficient to dry up one acre of irrigated cropland for each acre of pond surface area. Where the irrigated land is of marginal production (e.g. pasture on unproductive soil with limited irrigation), then additional documentation would be required from the applicant to estimate the consumptive use for the irrigated land. The one to one swap is only applicable for the evaporative component of water use from a pond and would not apply to other water uses from the pond or to additional rate or volume necessary to fill a pond, to maintain the water level due to seepage, or to maintain water quality or temperature in a pond.

Pond Consumptive Use Calculations
Climate Station: Twin Falls 2 NNE

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Annual FWS Evaporation (inches)*	45	45	45	45	45	45	45	45	45	45	45	45	45
Monthly Distribution (%)*	0.5	1.5	4	8	14	15	17	16	10	6	5	3	100
Monthly FWS Evaporation (in/mo)	0.2	0.7	1.8	3.6	6.3	6.8	7.7	7.2	4.5	2.7	2.3	1.4	45
Avg. Total Precipitation (in/mo)**	1.11	0.79	0.84	0.93	1	0.85	0.29	0.25	0.51	0.77	1.03	0.95	9.32
Pond Loss (Evap. - Precip., in)	0.00	0.00	0.96	2.67	5.30	5.90	7.36	6.95	3.99	1.93	1.22	0.40	36.68
Pond Surface Area (acres)	3	3	3	3	3	3	3	3	3	3	3	3	3
Total Pond Loss (ac-in)	0.0	0.0	2.9	8.0	15.9	17.7	22.1	20.9	12.0	5.8	3.7	1.2	110.0
Total Pond Loss (ac-ft)	0.0	0.0	0.2	0.7	1.3	1.5	1.8	1.7	1.0	0.5	0.3	0.1	9.2

Note: for months where precipitation exceeds evaporation, the resultant pond loss is set to zero

Irrigation Consumption		Crop
Mean Irrig. Requirement (in/seas.)***	35.6	Alfalfa hay
Mean Irrig. Requirement (ft/seas.)	2.97	
Acres to dry up for pond use	**3.1**	

* Molnau,Myron, Kpordze, Kojo C.S., and Craine,Katherine L., 1992. Monthly shallow pond evaporation in Idaho. ASAE paper PNW 92-111

**Data obtained from the Western Regional Climate Center, Monthly Climate Summary, Period of Record 9/1/1905 to 5/31/1974. See attached.

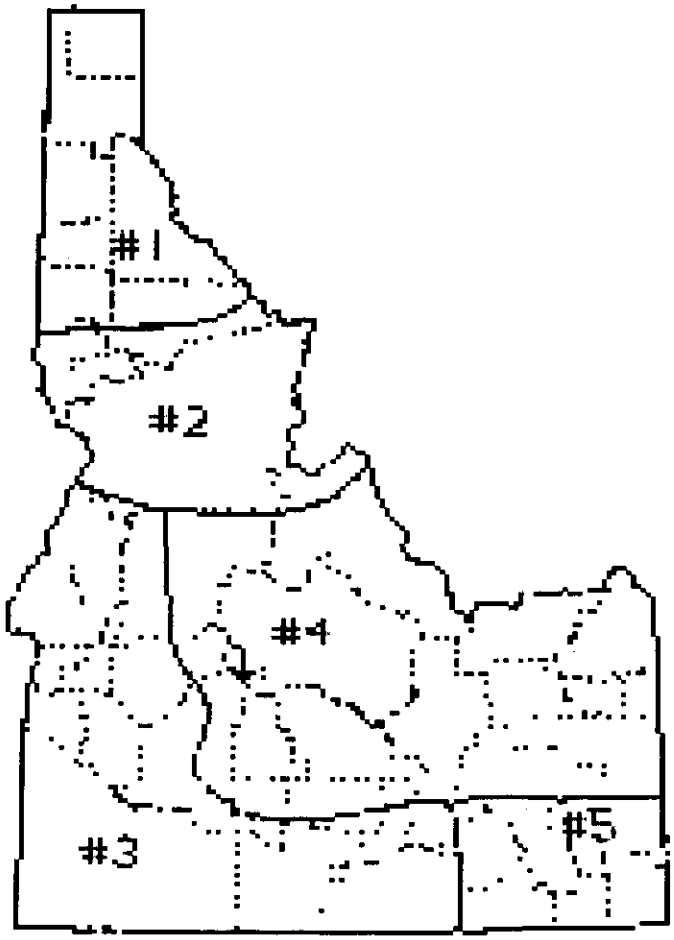
***Appendix E of the University of Idaho report: "Estimating Consumptive Irrigation Requirements for Crops in Idaho" published in 1983 by R. G. Allen and C. E. Brockway. See attached

MONTHLY SHALLOW POND EVAPORATION IN IDAHO

Molnau,Myron, Kpordze, Kojo C.S., and Craine,Katherine L., 1992. Monthly shallow pond evaporation in Idaho. ASAE paper PNW 92-111 *(http://snow.ag.uidaho.edu/publications/pond_evap/pond.html#TABLE%201)*

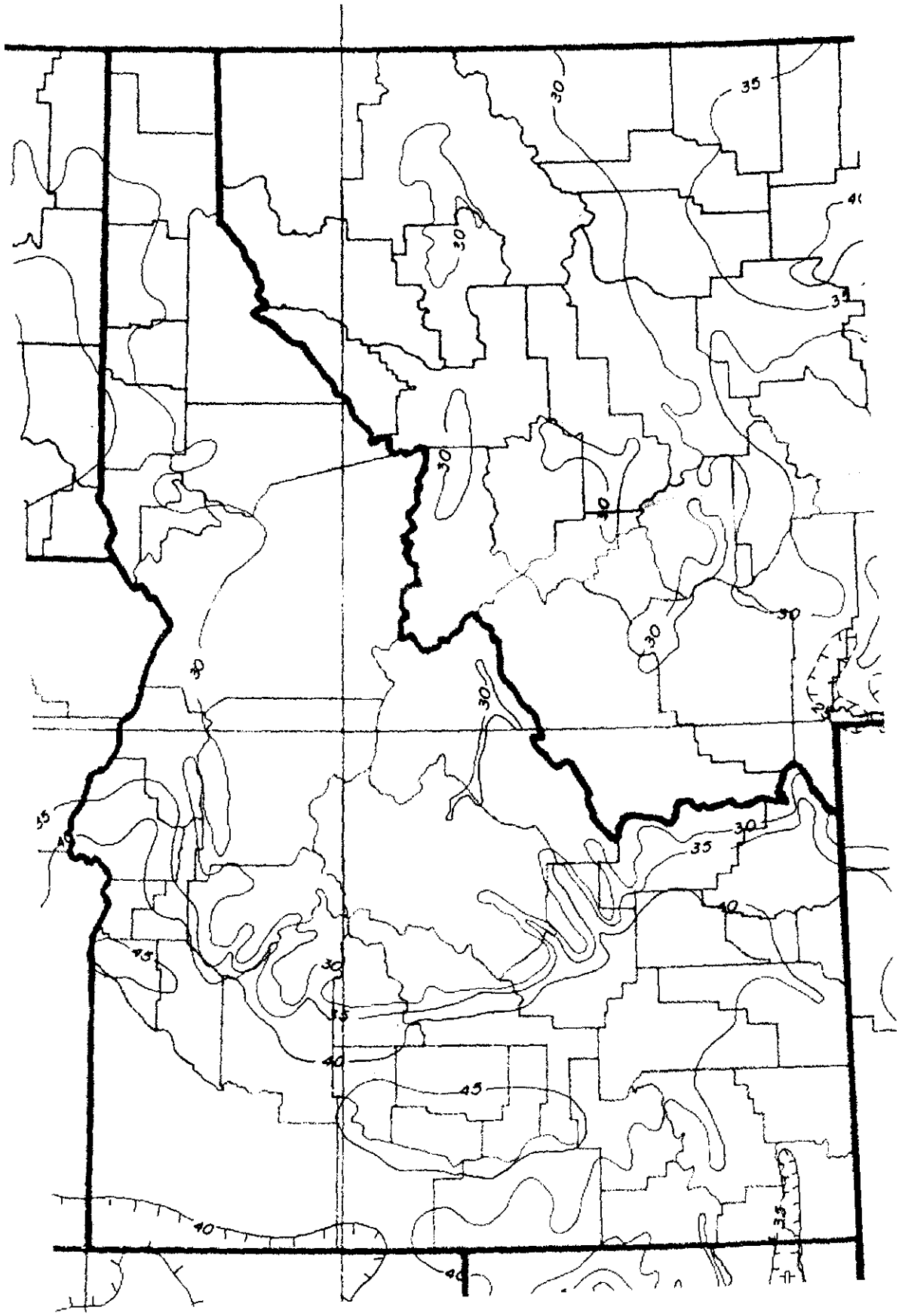
TABLE 1. Monthly shallow lake evaporation percentages for Idaho to be used with the map showing regions of monthly FWS evaporation

Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1.0	1.5	3	9	12	14	19	18	11	6	4	1.5
2	0.5	1.5	3	8	12	15	19	17	11	6	4	3
3	0.5	1.5	4	8	14	15	17	16	10	6	5	3
4	1.0	2.0	4	7	12	15	19	16	11	6	4	3
5	1.0	3.0	5	10	12	14	16	15	10	6	5	3



Regions of Monthly FWS Evaporation

Annual FWS Evaporation Map



TWIN FALLS 2 NNE, IDAHO (109294)

Period of Record Monthly Climate Summary

Period of Record : 9/ 1/1905 to 5/31/1974

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	36.5	42.6	52.0	62.3	71.6	79.9	90.3	88.1	77.8	65.6	50.0	39.1	63.0
Average Min. Temperature (F)	18.1	23.3	27.7	33.6	41.0	47.4	53.6	50.7	42.0	34.1	26.3	20.5	34.9
Average Total Precipitation (in.)	1.11	0.79	0.84	0.93	1.00	0.85	0.29	0.25	0.51	0.77	1.03	0.95	9.33
Average Total SnowFall (in.)	6.4	3.5	1.9	0.9	0.3	0.0	0.0	0.0	0.0	0.3	1.5	4.7	19.4
Average Snow Depth (in.)	1	1	0	0	0	0	0	0	0	0	0	1	0

Percent of possible observations for period of record.
Max. Temp.: 99% Min. Temp.: 98.9% Precipitation: 98.9% Snowfall: 99% Snow Depth: 95.3%
Check Station Metadata or Metadata graphics for more detail about data completeness.

Western Regional Climate Center, wrcc@dri.edu

Est. CU and CIR. Twin Falls 2 NNE (Allen & Brockway,1983) mm/day and mm/season

	MO	NYRS	PREC	ETR	ALFH.	ALFS.	BEANS	F.CRN	SILGE	S.CRN	PEAS	POTAT	SBEET	SGRAN	WGRAN	PAST.	ORCHD	VEGES	ONION
AVE ET	3	44	.86	2.13											.97				
AVE IR	3	44	100.00												.56				
STDD ET	3	44	.58	.32											.15				
STDD IR	3	44	100.00												.29				
SKEW ET	3	44	1.26	.54											.54				
SKEW IR	3	44	100.00												-1.11				
AVE ET	4	44	.92	4.75	2.95	3.35					1.44	1.42	1.42	1.46	4.34	2.96	1.94		1.42
AVE IR	4	44	100.00		2.40	2.78					.99	1.05	.93	1.02	3.78	2.43	1.44		1.05
STDD ET	4	44	.77	.47	.29	.33					.14	.14	.14	.14	.43	.29	.19		.14
STDD IR	4	44	100.00		.61	.65					.43	.38	.47	.43	.72	.60	.51		.38
SKEW ET	4	44	1.59	.11	.11	.11					.11	.11	.11	.11	.11	.11	.11		.11
SKEW IR	4	44	100.00		-.56	-.49					-.85	-.76	-.90	-.83	-.30	-.53	-.75		-.76
AVE ET	5	44	.98	6.34	5.88	5.70	1.90	1.90	1.90	1.90	3.60	2.05	1.91	4.46	6.34	4.88	3.73	1.93	2.52
AVE IR	5	44	97.73		5.19	5.02	1.45	1.39	1.39	1.39	3.07	1.65	1.39	3.92	5.68	4.26	3.15	1.54	2.12
STDD ET	5	44	.68	.48	.44	.43	.14	.14	.14	.14	.27	.15	.14	.33	.48	.37	.28	.14	.19
STDD IR	5	44	97.73		.78	.76	.41	.45	.45	.45	.54	.38	.45	.60	.79	.68	.58	.37	.41
SKEW ET	5	44	.74	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.15	.14	.14
SKEW IR	5	44	97.73		-.08	-.08	-.29	-.31	-.31	-.31	-.15	-.24	-.31	-.10	-.05	-.11	-.17	-.25	-.19
AVE ET	6	43	.91	7.92	6.92	6.88	3.47	3.45	3.45	3.45	6.42	5.43	3.92	7.88	7.92	6.10	6.37	4.14	4.70
AVE IR	6	43	97.67		6.23	6.19	2.99	2.92	2.92	2.92	5.83	4.97	3.37	7.25	7.24	5.47	5.74	3.72	4.26
STDD ET	6	43	.80	.45	.39	.39	.20	.20	.20	.20	.36	.31	.22	.45	.45	.35	.36	.23	.27
STDD IR	6	43	97.67		.91	.90	.57	.62	.62	.62	.80	.65	.66	.90	.95	.82	.84	.56	.60
SKEW ET	6	43	1.28	.60	.59	.59	.59	.58	.58	.58	.58	.60	.59	.59	.60	.60	.59	.59	.59
SKEW IR	6	43	97.67		-.61	-.62	-.77	-.80	-.80	-.80	-.58	-.55	-.77	-.50	-.54	-.64	-.62	-.65	-.61
AVE ET	7	43	.27	8.32	6.79	5.56	7.50	7.48	7.48	7.39	2.91	6.99	8.05	7.17	6.63	6.41	7.07	6.40	6.24
AVE IR	7	43	86.05		6.64	5.42	7.37	7.33	7.33	7.24	2.81	6.87	7.89	7.04	6.49	6.26	6.92	6.29	6.13
STDD ET	7	43	.24	.27	.22	.18	.24	.24	.24	.24	.09	.23	.26	.23	.21	.21	.23	.21	.20
STDD IR	7	43	86.05		.33	.29	.34	.35	.35	.35	.18	.30	.37	.32	.31	.31	.34	.28	.27
SKEW ET	7	43	1.72	-.15	-.14	-.13	-.11	-.10	-.10	-.13	-.09	-.18	-.13	-.16	-.20	-.15	-.15	-.08	-.14
SKEW IR	7	43	86.05		-.80	-.88	-.67	-.73	-.73	-.74	-1.16	-.60	-.69	-.68	-.76	-.80	-.76	-.60	-.64
AVE ET	8	43	.32	6.78	5.14	2.91	3.93	6.25	6.25	5.96		5.25	6.63	1.51	1.24	5.22	5.76	5.39	5.42
AVE IR	8	43	79.07		4.99	2.79	3.82	6.10	6.10	5.81		5.14	6.47	1.41	1.14	5.08	5.61	5.28	5.31
STDD ET	8	43	.51	.32	.24	.14	.18	.29	.29	.28		.25	.31	.07	.06	.25	.27	.25	.25
STDD IR	8	43	79.07		.48	.36	.38	.53	.53	.51		.41	.56	.26	.27	.47	.50	.42	.42
SKEW ET	8	43	3.68	-.09	-.08	-.07	-.08	-.12	-.12	-.09		-.06	-.09	-.09	-.08	-.08	-.09	-.08	-.09
SKEW IR	8	43	79.07		-2.82	-3.27	-2.88	-2.60	-2.60	-2.64		-2.40	-2.57	-3.55	-3.64	-2.75	-2.67	-2.38	-2.38
AVE ET	9	43	.61	5.22	3.52	1.49		3.90	3.90			3.06	4.48			4.02	4.37	3.56	4.15
AVE IR	9	43	86.05		3.21	1.21		3.60	3.60			2.83	4.15			3.71	4.06	3.33	3.91
STDD ET	9	43	.78	.41	.27	.12		.30	.30			.24	.35			.31	.34	.28	.32
STDD IR	9	43	86.05		.60	.46		.62	.62			.46	.67			.63	.66	.50	.55
SKEW ET	9	43	2.49	-.48	-.48	-.48		-.48	-.48			-.47	-.48			-.48	-.48	-.48	-.47
SKEW IR	9	43	86.05		-1.22	-1.81		-1.11	-1.11			-1.04	-1.03			-1.09	-1.03	-.93	-.83
AVE ET	10	43	.72	3.52	1.26	.47		.98					2.26			2.71	2.32		
AVE IR	10	43	97.67		.89	.12		.63					1.88			2.32	1.94		
STDD ET	10	43	.62	.35	.13	.05		.10					.23			.27	.23		
STDD IR	10	43	97.67		.39	.34		.36					.47			.50	.47		
SKEW ET	10	43	1.46	-.36	-.36	-.36		-.36					-.36			-.36	-.36		
SKEW IR	10	43	97.67		-.90	-1.13		-.97					-.66			-.58	-.65		
AVE ET	SE	43	135.9	1377.	993.	806.	518.	736.	705.	576.	438.	741.	879.	688.	839.	988.	966.	657.	748.
AVE IR	SE	43	0.0	0	904.	719.	481.	674.	655.	535.	387.	689.	800.	632.	760.	904.	883.	618.	697.
STDD ET	SE	43	43.4	42.	30.	27.	15.	20.	20.	17.	17.	21.	23.	23.	32.	28.	26.	19.	22.
STDD IR	SE	43	0.0	0.	55.	52.	30.	37.	38.	34.	40.	39.	45.	46.	57.	51.	49.	32.	40.
SKEW ET	SE	43	-.04	.06	.09	.26	.05	-.26	-.23	.01	.31	-.08	-.40	.31	.43	-.02	-.07	-.24	-.24
SKEW IR	SE	43			.03	-.03	-.02	.16	-.11	-.10	-.35	-.26	-.00	-.20	-.01	.03	-.01	-.10	-.22

Data also available @ www.kimberly.uidaho.edu/water/appndxet/index.shtml

MEMORANDUM

To: Regional Offices, Water Allocation Bureau
From: Jeff Peppersack
Date: May 3, 2010

Application Processing Memo # 71
Transfer Processing Memo # 27

Re: Water Rights Dedicated for Mitigation Protected from Forfeiture

House Bill 633 (2004) amended Idaho Code § 42-223 by protecting water rights from forfeiture if they are not used because the water right is dedicated as mitigation for some other water use. The amendment states:

> **(10) No portion of any water right shall be lost or forfeited for nonuse if the nonuse results from the water right being used for mitigation purposes approved by the director of the department of water resources including as a condition of approval for a new water right appropriation approved pursuant to section 42-203A, Idaho Code, a water right transfer approved pursuant to section 42-222, Idaho Code, a water exchange approved pursuant to section 42-240, Idaho Code, or a mitigation plan approved in accordance with rules promulgated pursuant to section 42-603, Idaho Code.**

The mitigation plan must be approved by the director, and must be associated with a new application to appropriate water, a water right transfer, a water right exchange, or a mitigation plan related to conjunctive management. This memorandum does not address mitigation plans associated with conjunctive management.

The statutory recognition of mitigation as a defense to forfeiture raises the issue of what processes are necessary for the mitigation to be approved by the director. IDWR has previously recognized mitigation as a beneficial use. Dedication of a water right for mitigation is dissimilar to other beneficial uses of water, however, because the beneficial use is, at times, a nonuse. This dichotomy is reflected in the amendment above where a water right is protected for "nonuse" when it is "being used for mitigation purposes."

Because of the recognition of protection from forfeiture given by Idaho Code § 42-223 and the statement that the director must approve the mitigation plan when it accompanies a new application to appropriate water, an application for transfer, or an application for exchange, an additional application for transfer or placement of the water right in the Water Supply Bank is not necessary if the water right is **not used**. Leaving water in a stream (or in the ground), or releasing water from storage to the stream is non-use. Diverting water through a canal or ditch system and delivering it back to the watercourse is non-use if it can be shown how the water will remain unused within the system. Diversion of surface water to a recharge facility and percolating it into the ground as mitigation for a ground water withdrawal is an additional beneficial use of water that must be authorized by the Department through an application for transfer or rental of water from the Water Supply Bank.

The following steps should be taken for mitigation plans proposing **nonuse** of water for mitigation:

(1) The water right or portion of a water right offered for mitigation must be identified with the application it accompanies. Sufficient information should be submitted with the application for IDWR to determine that the water right or part thereof will not be used. IDWR is responsible for verifying that the mitigation rights are valid and that the applicant has the authority to commit them to use as mitigation. IDWR staff at the regional office should correspond with the applicant to request the documentation needed for verification of the rights in a manner similar to that employed in transfer processing.

(2) The published legal notice for the water right filing must generally describe the mitigation plan.

(3) The department record of the water right or portion of a water right dedicated to mitigation will be modified to show mitigation as a use (even though it is a nonuse). Examples of common scenarios are provided later in this memo. A new water right number will not be issued for a portion of a right dedicated to mitigation unless there is a change of ownership for a portion of the right.

(4) If the water right or portion of a water right offered for mitigation is owned by a canal company, irrigation district, or other water delivery entity, the proponent of the mitigation plan must submit an agreement or consent document, signed by an authorized officer of the delivery entity, stating that the delivery entity agrees (a) to the use of its water right for mitigation and (b) that the water right records(s) of IDWR can be changed to reflect the nonuse of the water as mitigation use. If the consent or agreement states that the delivery entity retains authority to revoke the agreement to allow the use of the water for mitigation, IDWR will condition the water right that it is subject to cancellation or revocation if notified by the delivery entity that the water right can no longer be used for mitigation.

Processing Guidelines - Examples of Common Scenarios

Even though "mitigation rights" will not be lost due to nonuse, effective water right administration requires IDWR to identify and track the rights and portions of rights that will not be used. To determine the kinds of water right filings and procedures necessary to track the unused mitigation rights, it is useful to decide which of the five likely scenarios is applicable.

Scenario #1

The first scenario is where a new permit or exchange is mitigated by changing the nature of use of other pre-existing rights to ground water recharge or some similar use. For example, an application for permit for a pond in a moratorium area requires mitigation for any consumptive use (e.g. consumptive use associated with evaporation from the pond surface). One form of mitigation would be the diversion and use of water under an existing water right to provide make-up water for the evaporative losses. The nature of use is generally changed to ground water recharge or to the ultimate purpose of the pond such as aesthetics, wildlife or recreation. In this situation, in addition to the application for permit or application for exchange, the applicant must also file an application for transfer to alter the "mitigation rights" to authorize the new use. A transfer is required and the rights are not changed to mitigation as a nature of use because the change will involve actual diversion and application of the water to a beneficial use. This is the current practice and will not require a change to our procedures.

Scenario #2

The second scenario is where a transfer is mitigated by the nonuse of water under other pre-existing rights. An example would be the transfer of an existing ground water right authorizing irrigation use to a new location within the ESPA for a dairy, where nonuse of another irrigation right would provide mitigation for an increase in depletion to a reach of the Snake River. In this situation, the "mitigation rights" are treated in the transfer processing similar to other associated rights and are altered in the Workflow process for the transfer and included in the approval of the transfer. The nature of use for the mitigation rights will be changed to show mitigation as the use. This is also very close to our current practice and will require little change to our procedure with the exception that the mitigation rights do not need to be listed on the transfer application under the rights being transferred and will not be considered in calculation of the application fees.

Transfers in the ESPA that result in increased reach depletions in the Snake River can be mitigated by increased reach gains from other proposed ESPA transfers (offsetting transfers). This type of mitigation requires the transfer applications to be submitted together as part of a plan to mitigate or offset the effects of each individual transfer. This type of mitigation requires unique conditions of approval for the offsetting transfers to address future changes and differences in priority dates between rights to prevent injury in the event of delivery calls. See Transfer Memo No. 24 for additional details.

Scenario #3

The third scenario is where a new permit or exchange will be mitigated by the nonuse of water under other water rights. In the past IDWR required applicants to submit an associated application for transfer as a vehicle for changing the nature of use for the "mitigation right(s)" to mitigation. An application for transfer is no longer necessary for such a change. In situations where the new use is mitigated by the nonuse of water under other rights, IDWR uses the approval order for the new permit or exchange to approve the mitigation plan and to provide a vehicle for changing the official record for the mitigation right(s) that will no longer be used. The approval order shall include the following standard condition or a similar condition.

> **To mitigate for the depletion of water resulting from the use of water under this right and to prevent injury to senior water right holders, the right holder shall cease <diverting and> using water as authorized by the following water rights for the purposes and amounts specified below. Moreover, the official record for the following water rights will be changed to show that <diversion and> use of water is not authorized because the rights, or portion(s) thereof, are being dedicated to mitigation purposes.**

Right No.	Use Changed to Mitigation	Mitigation Rate	Mitigation Volume	Mitigation Acres
00-00000	Use	00.00	00.0	00
00-00000	Use	00.00	00.0	00

> **The land that will no longer be irrigated under these rights is located within the <XX¼XX¼, Section 00, Township 00 North, Range 00 East, B.M.>**

If a specified mitigation right, or portion thereof, is sold, transferred, leased, used on any place of use, or is not deliverable due to a shortage of water or a priority call, then the amount of water authorized for diversion under this <permit or exchange> approval shall be reduced by the same proportion as the reduction to the mitigation right.

When dealing with scenario #3, Department staff will complete data entry for the mitigation right(s) after issuing the approval document for the new permit or exchange. Data entry shall include a comment referring to the reason for the change and the number of the file where the approval order can be found. Data entry shall also include a change to the nature of use for the mitigation right(s) (or portion thereof) to show mitigation as the use and a change to the place of use including modification of the place of use shape file(s) to designate the portion of the place of use that will no longer be irrigated. The approving office shall document the water right file for the mitigation right(s) by forwarding a proof report depicting the changes to the WR Permits Section for inserting into the left side of the water right file. The proof report should show the comment described above and the appropriate changes reflecting the mitigation use.

Scenario #4

The fourth scenario is where a new permit, exchange or transfer will be mitigated by release of storage water under an existing storage right. An example would be the transfer of an existing ground water right authorizing irrigation use to a new location within the ESPA for an industrial use, where release of storage to a specified reach of the Snake River would provide mitigation for an increase in depletion to the reach due to the industrial use. This method is only approvable if the storage supply is reliable and assured either by pre-purchase or through other accepted operation plans within a rental pool. In this situation, a transfer is not required to change the nature of use of the storage right because the storage water is released (not used) and becomes available in the stream to other users as mitigation for any depletion caused by the new permit, exchange or transfer. Note that even though a transfer approval is not required, approval may be required pursuant to any existing rental pool procedures to authorize and record the rental or release of water from storage.

IDWR will use the approval order for the new permit, exchange or transfer with a condition to describe and approve the mitigation plan and to provide a vehicle for changing the official record for the storage ("mitigation") right(s) that will no longer be used, except as described below for storage releases from an existing rental pool. Department staff will complete data entry for the mitigation right(s) after issuing the approval document for the new permit, exchange or transfer. Data entry shall include a comment referring to the reason for the change and the number of the file where the approval order can be found. Data entry shall also include a change to the nature of use for the mitigation right(s) (or portion thereof) to show mitigation as the use. The place of use, including the shape file(s) for the mitigation use will be the same as the storage place of use. The approving office shall document the water right file for the mitigation right(s) by forwarding a proof report depicting the changes to the WR Permits Section for inserting into the left side of the water right file. The proof report should show the comment described above and the appropriate changes reflecting the mitigation use.

For storage releases through an existing rental pool, authority to use the water for mitigation purposes is addressed through the rental pool procedures. The official record for the storage right will not require changes in the form of data entry for comments, changes in use or modification of the place

of use. Therefore, documentation of the water right file for the mitigation right(s) with a proof report is also not necessary.

Scenario #5

The fifth scenario is where water is proposed to be left in a ditch or canal shared by multiple users to mitigate for injury that would be caused by a) transferring a water right out of the canal or b) nonuse of an existing right from the canal for mitigation purposes (Scenario 3). Multiple water users in a common ditch or canal rely on the combined flow of all the water rights to overcome conveyance losses associated with delivery of the rights through the canal. Under this scenario, injury could occur to other water users if the flow in the canal is reduced due to a transfer or nonuse (for mitigation) of one of the rights from the canal. Injury can be mitigated by continued diversion of a portion of the authorized flow into the canal for conveyance loss.

If a water right is transferred out of the canal, the flow left behind for conveyance loss will continue to be described as part of the flow and beneficial use of the transferred right (i.e. do not change to mitigation use) at the location of the transferred use. The point of diversion for the canal will continue to be described as one of the authorized points of diversion of the right. A condition of approval of the transfer will describe the requirement to continue diversion of a portion of the authorized diversion rate into the canal to offset injury to other users from the canal.

If a water right that historically diverted water from a canal is committed to nonuse for mitigation purposes (Scenario 3), the continued diversion of water into the canal for conveyance loss will be described as part of the mitigation use. The condition of approval associated with Scenario 3 above will be modified or supplemented to describe the requirement to continue diversion of a portion of the authorized diversion rate into the canal to offset injury to other users from the canal.

ADMINISTRATOR'S MEMORANDUM

To: Regional Offices,
Water Allocation Bureau

Application Processing No. 73
Licensing No. 12
Transfer Processing No. 28

From: Jeff Peppersack

Re: UTILIZATION OF THE 24-HOUR FILL ALLOWANCE FOR IMPOUNDMENTS

Date: April 18, 2013

Department practices and policies have recognized the use of the 24-hour fill allowance (aka the "24-hour rule") in establishing the maximum impoundment volume allowed in association with a water right permit, license, or decree, for which a storage component identified as an element of the water right is not required (AP Memo 67[1]). The Department has not provided additional guidance for implementation of this policy; consequently, the 24-hour fill allowance has been implemented by staff in a variety of ways. Additional guidance is necessary to avoid a proliferation of ponds on new or existing water diversion systems that may result in additional consumptive use and lack of control of the water to the detriment of other water users. It is important to note that this memo does not represent promulgated rules, but is instead a statement of the policy and practical implementation of the 24-hour fill allowance that has historically been used by the Department.

The guidance provided in this memo is intended to provide clarity, consistency, and detail in the implementation and use of the 24-hour fill allowance for ponds constructed or proposed to be constructed after the date of this memorandum and to changes in use of existing ponds, where the change in use occurs or is proposed to occur after the date of this memorandum. It is not intended to direct Department staff to initiate investigative or regulatory action for ponds existing prior to the date of this memorandum, that otherwise met past interpretations of the 24-hour fill allowance, or to address the need for a claim to be filed in an ongoing adjudication of water rights. If a written complaint is filed with the Department showing probable injury to an existing water right where the injury is alleged to be related to the use of a pond developed prior to the date of this memorandum, staff is instructed to forward the complaint to the division administrator for case-by-case guidance.

[1] Application Processing Memorandum No. 67 Permitting Requirements for Ponds, signed by Norm Young on February 28, 2003, states in part "A water right permit is not required to construct and use a pond or ponds that are part of a system used to distribute and use water in accordance with a valid water right if the pond or ponds do not impound a larger volume of water than authorized for diversion within a 24-hour period under the water right or rights associated with the project."

Historic utilization of the 24-hour fill allowance came about as recognition that many diversion structures will incidentally impound a certain amount of water to either raise the water level or otherwise facilitate diversion into a canal or other conveyance or distribution system, or to provide for short-term detention (24-hours) to facilitate operation of the distribution system for the purpose of use authorized under the water right. An example of the first case is creation of a small pool of water to ensure proper submergence of the suction piping in a pumping system. An example of the second case is detention of water in a small pond to provide a delayed, adjusted rate of diversion for night-time irrigation of a golf course or other facility where continuous irrigation during the day is not practical. Recognition of the 24-hour fill allowance for such uses is beneficial to the Department and water users because it eliminates the need to describe a storage component on a large number of water rights, allowing for faster processing of water right applications.

Further application of the 24-hour fill allowance by Department staff over time included its use for aesthetic, wildlife and/or recreation ponds. However, such application goes beyond the original intent of the 24-hour fill allowance because the pond is the end use of the water and the water right should include a storage component to properly describe the use. A storage component as part of the water right is necessary for such uses to ensure that the Department can address consumptive use associated with the pond and to describe any quantities, period of use or conditions necessary to limit the use to avoid injury to other water users.

Due to the lack of formal resources addressing the 24-hour fill allowance, questions are often raised by Department staff regarding its implementation. The following explanation and scenarios are intended to illustrate proper use of the 24-hour fill allowance and to prevent future misunderstandings of the policy by Department staff and water users.

DIVERSION RATE USED TO CALCULATE THE 24-HOUR FILL ALLOWANCE

The volume of water provided under the 24-hour fill allowance is calculated by multiplying the diversion rate by a 24-hour time period. As a simple example, if a water right recognizes a diversion rate of 1 cfs for irrigation, an impoundment volume less than or equal to 1.98 ac-ft used to facilitate pumping would not require a storage component on the water right.[2] Conversely, for the same water right, an impoundment volume greater than 1.98 ac-ft would require that the water right contain an element describing the entire storage component consistent with Water Appropriation Rule 35.03 (b) iv and v (*IDAPA 37.03.08)*.

When applying the 24-hour fill allowance to calculate the maximum volume of a pond, series of ponds, reservoir, or series of reservoirs (henceforth referred to as a pond) associated with a specific water right, the diversion rate used in the calculation is limited to the authorized diversion rate associated with the water right and is further limited by the available water supply or the capacity of the works at the inlet to the pond. Regardless of availability of water, diversion rates in excess of that authorized on the water right

[2] 1.98 ac-ft = (1 ft^3/s)*(86,400 s/day)*(1 ac/43,560 ft^2). This conversion is simplified as 1.984 ac-ft per cfs per day.

or rights, specifically utilizing the pond in question, are inappropriate for use in the 24-hour fill allowance calculation.

An example of inappropriate diversion rate includes a natural stream flow rate for an on-stream pond—an extreme variant of this is relying on the peak stream flow rate for analysis and pond sizing. This can be encountered when reviewing on-stream hydropower water rights. In such instances, the 24-hour fill allowance should be limited to the volume derived from the authorized diversion rate of the water right, and consideration of any excess available natural flow rates associated with the stream channel is inappropriate. Another example of a diversion rate that is inappropriate for consideration includes a diversion rate in a delivery system associated with other unrelated water rights for which the pond does not facilitate operation. This may include downstream water rights that use the system for conveyance (e.g. downstream irrigators), or water rights with additional beneficial uses that are not facilitated by the pond (e.g. stockwater used above the irrigation works in the system).

The appropriate diversion rate used to calculate the 24-hour fill allowance volume cannot exceed the fully authorized diversion rate associated with a specific water right; however, oftentimes the actual diverted (measured) rate is something less than the fully authorized rate. In these instances it is the rate that is actually being diverted, not the authorized diversion rate, that should be used in the calculation to determine the 24-hour fill allowance volume. For example, if an irrigation water right authorizes 5 cfs of diversion, but in actuality only 3 cfs of the total rate is conveyed into a part of the system incorporating the pond under consideration, and the remaining diversion rate is used in a separate part of the system, then the 24-hour fill allowance calculation is limited to a diversion rate of 3 cfs.

Combination of Beneficial Uses and/or Multiple Water Rights

It has been the Department's practice to allow for a combined pond volume based on the 24-hour fill allowance calculation of multiple beneficial uses under the same water right, and/or multiple water rights associated with the same system. As an example of the first case, if a golf course resort plans to develop a water right that includes a pond to facilitate a golf course irrigation component (2.5 cfs) and a commercial (equipment washing) component (1.2 cfs for two hours), the appropriate combined 24-hour fill allowance volume is 5.16 ac-ft.[3] As an example of the second case, if an irrigation system includes a pond and has two water rights associated with the system for 2 cfs and 3 cfs respectively, then the appropriate combined 24-hour fill allowance volume is 9.92 ac-ft.[4] Note, both examples are contingent upon the diversion or operation being facilitated by the pond.

Seepage & Evaporation in Conjunction with the 24-Hour Fill Allowance

When calculating the 24-hour fill allowance volume, no consideration should be given to gains and losses to the pond volume associated with precipitation, evaporation, or seepage. The volume calculation is based solely on the product of the appropriate diversion rate associated with the water right and a 24-hour diversion period. No adjustments up or down should be made to the diversion rate or allowable pond volume to reflect actual water balance conditions.

[3] 5.16 ac-ft = (2.5 cfs)*(1.984 ac-ft/cfs/day) + (1.2 cfs)*(2 hrs)/(24 hrs/day)*(1.984 ac-ft/cfs/day)
[4] 9.92 ac-ft = (2 + 3 cfs)*(1.984 ac-ft/cfs/day)

TYPES OF IMPOUNDMENTS

Off-Stream Impoundments to Facilitate Diversion or Operation of the Distribution System

Application of the 24-hour fill allowance to address off-stream impoundments is appropriate when the impoundment is used to facilitate the diversion of water or operation of a distribution system for the authorized purpose of use. Such impoundments may include sumps for pumping systems or short-term detention ponds for irrigation systems.

Off-Stream Impoundments for Recreation, Wildlife and Aesthetic Uses

As a general rule, it is not appropriate to utilize the 24-hour fill allowance for off-stream impoundments where the impoundment represents the end use of the water such as aesthetics, recreation and or wildlife uses.[5] Such impoundments, which may include wide meanders and/or pools within the conveyance channel, must include a storage component as part of the water right authorizing the use.

On-Stream Impoundments to Facilitate Diversion or Operation of the Distribution System

Application of the 24-hour fill allowance to address on-stream impoundments is limited to impoundments that facilitate diversion of water or operation of a distribution system for the authorized purpose of use. Such impoundments may include use for on-stream hydropower facilities or on-stream diversions for authorized off-stream water uses.

In regards to run-of-the-river (ROR) hydroelectric water uses, application of the 24-hour fill allowance to support incidental on-stream impoundment is an acceptable application. ROR hydroelectric projects are those with small or no reservoir capacity. In the strictest sense of the definition, this implies that water passing through the facility must be used at that moment, or must be allowed to bypass the dam. Oftentimes in practice ROR facilities are actually operated in a "load following" manner. Load following indicates a practice where power output is adjusted to meet the fluctuating demand throughout a 24-hour period. Load following requires that a small amount of storage occur upstream of the dam to provide water releases to meet the peak daily demand for electrical generation. The Lower Salmon Falls Hydroelectric facility is one such example. Traditionally the Department has not required a storage water right in association with ROR facilities if the volume of water impounded upstream of the dam in support of a load following operation satisfies the 24-hour fill allowance calculation. Note that conditions of a hydropower water right, or conditions of other permits associated with the use (e.g. a FERC license) may preclude such practice.

On-Stream Impoundments for Recreation, Wildlife and Aesthetic Uses

Similar to off-stream impoundments for such uses, it is not appropriate to utilize the 24-hour fill allowance for on-stream impoundments where the impoundment represents the end use of the water such as aesthetics, recreation and or wildlife uses. Furthermore, such use would constitute a minimum in-stream

[5] A storage component may not be necessary if the total use falls within the statutory definition of a domestic or stockwater right.

flow because the water right quantity would be described as a flow rate, and consistent with Idaho Code Title 42, Chapter 15, Minimum Stream Flow, only the Idaho Water Resource Board (IWRB) can file an application and hold a minimum stream flow water right.

OTHER CONSIDERATIONS

Water Tanks

Many water users incorporate tanks or cisterns in their distribution system. Such features are generally not considered storage and are not required to be covered under a specific storage water right. Some circumstances, especially where a tank or cistern is added to an established non-municipal water right, may raise injury and/or enlargement concerns and may require a storage component.

Timing of Fill

The diversion of water to a pond where impoundment is only allowed by implementation of the 24-hour fill allowance, and where no storage component is identified on the water right, can only occur during the season of use described on the water right. As an example, if an irrigation water right includes a pond with a volume established by the 24-hour fill allowance, diversion of water to fill that pond can occur no earlier than the first day of the irrigation season of use. It would be an illegal diversion of water if the pond were filled when the water right is out of season, to take advantage of water availability (i.e. early season runoff).

Drainage of Pond

Once diverted, water impounded to facilitate diversion or operation is considered beneficially used and water users are not expected to drain the pond or return the water to the source at the end of the season or when the water is off due to a priority cut. However, significant amounts of water routinely held at the end of the period of use may raise questions regarding the intent of the pond or impoundment and may result in the need for a water right for an alternate use such as aesthetics or recreation storage.

MEMORANDUM

TO: Regional Offices
Water Allocation Bureau

FROM: Mat Weaver MW

RE: Recommendations for the Processing of Reasonably Anticipated Future Needs (RAFN) Municipal Water Rights at the Time of Application, Licensing, and Transfer

DATE: March 16, 2015

Application Processing No. 74
Permit Processing No. 20
License Processing No. 13
Transfer Processing No. 29

See attached Amended RAFN Municipal Water Right Handbook

IDAHO DEPARTMENT OF WATER RESOURCES

Recommendations for the Processing of Reasonably Anticipated Future Needs (RAFN) Municipal Water Rights at the Time of Application, Licensing, and Transfer

March 2015

Table of Contents

Appendix

1. Introduction

This document is intended to provide guidance and support to Idaho Department of Water Resources (the Department) staff in evaluating and processing applications for reasonably anticipated future needs (RAFN) water rights and can be used to provide assistance to applicants seeking RAFN water rights throughout the application, permit, license, and transfer processes. Guidance does not have the force and effect of law. Rather, it is designed to serve as a primary reference tool to assist agency staff and to assist those impacted by agency actions to comply with the law. The appendix includes a number of resources and support items related to RAFN analysis including the following: "*Municipal Water Right Permit Evaluation" checklist* (Item 5), which can be utilized by the applicant when applying for RAFN water rights; methods for estimating residential demand (Item 3); and a detailed example of the determination of RAFN for a small community that implements the methodology described in this document (Item 6).

RAFN vs. non-RAFN Prior to 1996, common law practices allowed municipalities to establish water rights greater than immediate needs. The 1996 Municipal Water Rights Act provided a statutory process for establishing a municipal water supply for reasonably anticipated future needs (RAFN). The 1996 Municipal Water Rights act was codified in Idaho Statutes in the form of amendments to Idaho Code (I.C.) §42-202, the addition of I.C. §42-202B, amendments to I.C. §42-217, amendments to I.C. §42-219, and amendments to I.C. §42-222. A key distinction of the RAFN right is the allowance of components of the water right, namely the diversion rate, to be perfected without physically completing diversion and use in establishing beneficial use during the development period of the permit.

There are times when a municipal provider will choose to file an application to appropriate water solely for use to meet needs in the near-term (up to five years) without the burden of demonstrating future needs over an established planning horizon. This type of municipal water right has been termed a non-RAFN municipal right. Municipal water rights that are not defined as RAFN in conditional language are by default non-RAFN water rights. *Application Processing Memo #18* presents and discusses the distinctions between both types of municipal water rights and provides guidance to Department staff for processing permits and determining extent of beneficial use for licensing of non-RAFN municipal water right permits. It is not the intent of this document to repeat or duplicate the material presented in AP Memo #18. The focus of this document will be on RAFN municipal water rights. When a water right application has been determined to be for a non-RAFN municipal beneficial use, Department staff should consult AP Memo #18 for processing guidance.

In addition to water rights with a designated municipal beneficial use, municipal providers may also own water rights for non-municipal uses such as domestic, irrigation, commercial, etc. These water rights are often associated with uses such as parks, golf courses, cemeteries, and buildings that are not directly connected to a municipal provider's primary municipal water delivery system. These water rights are sometimes acquired from previous non-municipal water right holders with the acquisition of land by the municipality. In other instances they may have been developed directly by the municipal provider for a demand not distributed throughout the entire existing water service area, or not otherwise qualified as a municipal use. When conducting a review of a municipal provider's suite of water rights, these water rights should be considered along with any existing water rights used for municipal needs, and any evaluation of RAFN should take into consideration beneficial use already being met by these types of water rights.

Types of Municipal Providers
Idaho Code §42-202 provides, in relevant part:

> An application proposing an appropriation of water by a municipal provider for reasonably anticipated future needs shall be accompanied by sufficient information and documentation to establish that the

applicant qualifies as a municipal provider and that the reasonably anticipated future needs, the service area and the planning horizon are consistent with the definitions and requirements specified in this chapter.

Idaho Code §42-202B(5) defines three types of municipal providers:

a) A municipality that provides water for municipal purposes (i.e. incorporated cities);

b) Any corporation or association holding a franchise to supply water for municipal purposes, or a political subdivision of the state of Idaho authorized to supply water for municipal purposes, and which does supply water, for municipal purposes to users within its service area (e.g. Water and Sewer Districts; United Water Idaho, a private company that supplies public drinking water to much of Ada County); or

c) A corporation or association which supplies water for municipal purposes through a water system regulated by the state of Idaho as a "public water supply" as described in I.C. § 39-103(12), Idaho Code. (e.g. developers; subdivision home owner associations).

As set forth in M3 Eagle Final Amended Order[1] (M3 Final Amended Order) a corporation or association seeking to qualify as a municipal provider under subsection c above for RAFN must qualify as a municipal provider at the time application is considered by the Department. In other words, at the time of application, the applicant must already supply water for municipal purposes through a water system that is regulated by the state of Idaho as a public water supply. It is insufficient for the applicant to merely be "*ready, willing, and able*" to be a municipal provider once the permit is issued.

2. Evaluating Reasonably Anticipated Future Needs

This section outlines and develops a fundamental protocol that should be considered by the applicant and Department staff in evaluating reasonably anticipated future water needs for qualified municipal providers.

As discussed above, Idaho law allows a municipal provider to secure water rights for RAFN purposes without relying on immediate diversion and use to establish beneficial use. For a qualified municipal provider, a RAFN estimate has four fundamental components:

1. Service Area (I.C. §42-202B (9)),
2. Planning Horizon (I.C. §42-202B (7)),
3. Population Projections within the Planning Horizon, and
4. Water Demand (necessary to serve the population during the planning horizon throughout the service area)

This protocol explains each one of these four components in order, and then describes how they should be used to evaluate a municipal provider's RAFN.

It is important to recognize at the outset that a conservative standard may be appropriate in estimating future needs to justify a RAFN water right, especially in instances where there is a weighing of public interest in an area of recognized limited water supply. There may be a difference between the supply of water sufficient to sustain an urban population and the supply desirable to keep future operating costs low or to provide aesthetic amenities.

[1] Amended Final Order of the Department in the matter of application to appropriate water no. 63-32573 In the name of M3 Eagle LLC dated January 25, 2010.

Service Area

Idaho Code §42-202B (9) defines the service area for a municipality as follows:

> "Service area" means that area within which a municipal provider is or becomes entitled or obligated to provide water for municipal purposes. For a municipality, the service area shall correspond to its corporate limits, or other recognized boundaries, including changes therein, after the permit or license is issued. The service area for a municipality may also include areas outside its corporate limits, or other recognized boundaries, that are within the municipality's established planning area if the constructed delivery system for the area shares a common water distribution system with lands located within the corporate limits. For a municipal provider that is not a municipality, the service area shall correspond to the area that it is authorized or obligated to serve, including changes therein after the permit or license is issued.

For a municipal provider, Idaho code requires the RAFN service area to be contained within the municipality's "established planning area" (I.C. §42-202B (9)) minus "areas overlapped by conflicting comprehensive land use plans" (I.C. §42-202B (8)).

For smaller widely-separated cities, the concern of overlapping comprehensive land use plans is not typically an issue. For these cities to justify a proposed future service area, the applicant should provide evidence of existing "corporate limits" and "other recognized boundaries" (I.C. §42-202B (9)). Idaho Code §50-102 requires the establishment of corporate limits (recorded metes and bounds description of the incorporated area) in association with the incorporation of a city. These limits are established with the counties within which the city is located. Where the applicant is a city, copies of corporate limits should be provided by the applicant. As necessary, staff can cross check corporate limits by obtaining the boundary directly from the city, governing counties, or the state. In addition, the Department maintains a spatial data layer delineating all incorporated cities and their respective city limits within the State of Idaho. This data layer is based on U.S. Census data that is updated every ten years. This data layer can be a good place to start in determining corporate limits, but there is a chance it may not represent the most current boundary, and, when the applicant is a city, staff should always obtain a current delineation of the corporate limits from the RAFN applicant or permit holder at the time of permitting and licensing. The purpose of this current boundary information is to facilitate the Department's review of the proposed RAFN service area.

Other recognized boundaries can include areas of impact, utility service planning areas, or other unique planning areas, provided they have been legitimately adopted by the municipality with verifiable records, as "established planning area[s]" consistent with I.C. §42-202B (9). Idaho Code §67-6526 in the Local Land Use Planning statutes requires that incorporated cities provide a map *"identifying an area of city impact within the unincorporated area of the county"*. In addition, I.C. §67-6508 requires the creation, adoption, and ongoing update of a comprehensive plan for any incorporated city. The comprehensive plan will typically include maps identifying incorporated limits, areas of city impact, and other legitimate planning boundaries.

For types b and c municipal providers, the "established planning area(s)" language does not apply. Rather, the applicant may submit an approved preliminary plat or other approved planning type documents, Public Utility Commission approval documents, Idaho Department of Environmental Quality public drinking water system approval documents, irrigation district and water and sewer district annexation plan, or other official documents which demonstrate a RAFN service area within which the applicant has the authority or obligation to provide water.

Idaho Code §42-202B (8) states, *"Reasonably anticipated future needs shall not include uses of water within areas overlapped by conflicting comprehensive land use plans."* When evaluating a proposed RAFN service

area where two or more municipal providers abut one another, the applicant should research adjacent community planning areas to confirm that overlaps in competing planning areas *specific to water service* do not exist. If overlaps in comprehensive land use planning areas specific to water service do exist between two different municipal providers, the area of overlap cannot be included in the proposed RAFN service area under consideration. As an example, if a subdivision intersects the planning boundaries of two separate municipal providers, and both entities indicate in their comprehensive land use plans the intent to serve the same subdivision with water, then neither entity can include the subdivision in a proposed RAFN water service area until the conflict has been resolved and one of the two entities relinquishes water service to the other. However, in another example, if an overlap exists in the comprehensive land use plans of two municipal providers, but only one plan addresses water service, and the other plan acknowledges that water service is provided by the other entity, then the area of overlap can be included in the RAFN service area of the entity providing water service.

When the applicant is a municipality with multiple municipal water service providers within its city limits or area of impact, the applicant should normally exclude the existing service areas of other municipal providers from the RAFN service area under consideration. However, if the RAFN applicant presents a sound argument and supporting evidence for the inclusion of competing existing water service areas within its own RAFN service area, Department staff may include them in the final RAFN service area delineation. As an example, if the systems of two water service providers are cross connected to allow for one system to provide water to the other during times of emergency, during periods of routine maintenance, or in support of peak water demands, it would be appropriate to include this demand in the RAFN analysis of the municipality that is providing water to the second water service provider, provided the established need is not already covered by an existing water right. If the established need is covered by an existing water right, a unique combined used limitation condition detailing the water supply relationship should be considered.

In conclusion, RAFN service areas should be delimited to include all existing contiguous and non-contiguous areas of water service (assuming they are combined) and adjacent areas poised for development and likely to occur within the established planning horizon time period. However, the proposed RAFN service area cannot include areas where water is not provided at the time of application if the proposed RAFN service area is overlapped by adjacent land use planning boundaries, or is already included within the existing service area of a municipal water provider other than the municipal provider under consideration. In addition, where the applicant is a municipality, the proposed RAFN service area cannot include areas where water is not provided at the time of application if the proposed service area is outside the municipality's currently adopted planning area. The appendix includes an example of a visual delineation of a RAFN service area based on underlying appurtenant boundaries (appendix Item 2).

<u>Planning Horizon</u>

Idaho Code §42-202B (7) defines the planning horizon for a municipal provider as follows:

> *"Planning horizon" refers to the length of time that the department determines is reasonable for a municipal provider to hold water rights to meet reasonably anticipated future needs. The length of the planning horizon may vary according to the needs of the particular municipal provider.*

A municipal provider's planning horizon is the term of years over which it projects its population change and makes water service decisions based on its projection. At the time of application for RAFN municipal water use, the applicant will present a planning horizon time period, including a specified ending year. Department staff must evaluate, among other things, whether the proposed planning horizon is reasonable. Some additional items to consider include:

- The customary standards of practice for water infrastructure planning

- The planning period identified in any applicable Comprehensive Plan
- Planning periods identified by other applicable planning documents
- Regional planning studies

It is important to note that the maximum development period for beneficial use associated with a non-RAFN water right is five years, which can be extended an additional five to ten years for a total of ten to fifteen years. Therefore, a planning horizon of less than five years would not warrant a RAFN water right. The following table (Table 1) summarizes planning horizon durations as published in six water planning references.

Table 1 - Summary of Published Planning Horizon Periods

Published Reference*	Planning Horizon (years)
Fair 1971	10 - 50
Prasifka 1988	10 - 100
Dzurik 1996	< 50
Boumann 1998	< 50
Stephenson 2003	10 - 20
AWWA 2007	20 - 40

*Refer to Bibliography (Appendix Item 1) for reference details.

Table 2 summarizes planning horizons associated with actual water resource planning documents in the State of Idaho. The references summarized in Table 2 represent a variety of planning documents with unique objectives and planning areas. Some of the values are more applicable than others for use in comparison to proposed RAFN planning periods.

Table 2 - Summary of Actual Water Planning Documents and their Respective Adopted Planning Horizon Periods

Planning Area	Planning Horizon (years)	Planning Document Type
Ada & Canyon Counties	25	IDWR Water Demand Study
City of Coeur d'Alene	20	Comprehensive Water Plan
City of Lewiston	20	Master Water Plan
City of Meridian	50	Master Water Plan
City of Nampa	20	Master Water Plan
City of Pocatello	10	Master Water Plan
City of Rexburg	50	2008 Water System Tech. Memo
City of Twin Falls	30	Water Supply Improvement Plan
Rathdrum Prairie Aq.	50	CAMP Water Demand Projections Study
Treasure Valley	50	CAMP Future Water Demand Study
United Water Idaho	55	Water Demand Study

The data presented in Tables 1 and 2 suggest that planning horizons between 10 and 55 years are the standard amongst the planning profession and in the actual adoption of planning documents within the State of Idaho.

The Department must guard against over-appropriation of the resource and against speculative water right filings. Longer planning horizons increase the level of uncertainty associated with predicted values and must be considered by the Department with greater caution. Planning horizons of 15-20 years are generally reasonable and require little scrutiny unless there is substantiated competition for the resource or some other justification for additional scrutiny arises. Planning horizons greater than 20 years can be considered by the Department, but when proposed they should be supported by long-term planning documents such as those listed in Table 2 and by professionally prepared demographic studies substantiating the duration of the planning horizon period.

Idaho Code §42-202B (8) provides additional guidance regarding the evaluation of planning horizons as follows:

> *"Reasonably anticipated future needs" refers to future uses of water…reasonably expected to be required within the planning horizon of each municipality within the service area not inconsistent with comprehensive land use plans approved by each municipality.*

As a final measure, the planning horizon period proposed by the applicant must not only be reasonable, but also consistent with the adopted Comprehensive Plan of the City. This can be interpreted to mean no greater in length than the planning horizon period associated with the Comprehensive Plan, if no other pertinent planning documents exist. When another pertinent planning document exists, such as a master water plan, then the planning document should be consistent with the master plan for the coincident period of time shared between the planning horizons of both documents.

Population Projection within the Planning Horizon[2]

Idaho Code §42-202B (8) indicates that RAFN should be based on *"population and other planning data."* To establish its RAFN, a municipal provider must estimate its future population within its service area at the end of the planning horizon. For most municipalities, planning and demographic studies of one type or another have been completed, and often multiple relevant studies exist. At a minimum, Comprehensive Plans usually address population growth in some form as required by I.C. §67-6508 (b). The U.S. Census Bureau also provides population and demographic data for most municipalities in Idaho in a variety of formats. For communities where appropriate data exists, Department staff should expect the following components and considerations regarding population forecasts to be addressed and discussed in detail by the applicant.

1. A critical survey of existing contemporary population studies applicable to the local area to establish likely upper and lower boundaries for population growth.
2. Project population using standard technical methods, such as regression, extrapolation, or cohort survival models. To make extrapolation appropriate, one should account for geography, resource constraints, economic conditions, and other limiting factors or anticipated events, such as relocation of a commercial or industrial use.
3. Compare the results of the population projections from step 2 to the results of the critical survey from step 1 and apply professional judgment to evaluate whether the population projections are likely to occur within the planning horizon and are, therefore, reasonable.

Department staff should scrutinize population growth rates and projections that fall near or outside the upper boundary established in the critical survey. Staff should also scrutinize results based on short term trends in population growth. Where sufficient data exists population forecasts should be based on a minimum of thirty years of population data. The U.S. Census Bureau provides decadal populations for every county in Idaho. Since 1970 the population growth rate of the entire state of Idaho has been 1.91%. The maximum growth rate in that time was 3.72% in Teton County and the minimum growth rate was -1.20% in Shoshone County. Since 1970, growth rates in excess of 3.00% were only realized in five counties. Growth rates in excess of 2.50% were realized by less than 14% of Idaho counties. As such, applicants should provide extra justification for requested growth rates in excess of 2.50% annually.

In some instances when municipal providers are providing water to a rural or unincorporated community, existing population data specific to the community might be difficult to acquire or may simply not exist. In

[2] The 'Population Projection within the Planning Horizon' section of the RAFN handbook was prepared in conjunction with and under the review of Don Reading, Ph.D., a consulting economist with Ben Johnson Associates, Inc.

other instances the applicant may lack sufficient experience and/or expertise to forecast populations without assistance. In these select cases, the applicant may rely on a population forecasting tool that has been developed by the Department in Microsoft Excel to assist in population forecasting[3]. The tool summarizes dynamic ranges of U.S. Census Bureau population data by county and supports the regression of exponential and linear growth type models to the county census data to allow for the projection or forecasting of future populations. In addition, the spreadsheet tool allows for the development of exponential and linear population growth rate models based on user input population data. Forecasting conducted with this tool is only appropriate as a means of last resort and should not be used for communities where specific data and/or population and demographic studies already exist. The tool may also be useful directly to Department staff as a means of roughly verifying the population forecasts made by an applicant, allowing Department staff the opportunity to "double check" a proposed growth rate or population forecast.

For communities starting from zero or a very small base population, the method of relying on historical or analogous growth rates may not be applicable. In these instances, reliable growth or build-out projections provided by the applicant may be considered by the Department.

Water Demand

Water demand is the final component of a RAFN that must be considered and evaluated by Department staff. Water demand represents the future projected water use in a community. Water use can broadly be placed into two categories: (1) non-residential use and (2) residential use. Non-residential use consists of irrigation of open common spaces (parks, golf courses, etc.), public facility use, industrial use, commercial use, and any and all other municipal purposes. Residential use can be further broken down into in-home use, out of home use (landscape irrigation, car washing, etc.), and fire protection.

To prevent over-appropriation of water, fire protection flow requirements should not be used as justification for water demand as part of a RAFN application. Per Idaho Code §42-201, *"[W]ater may be diverted from a natural watercourse and used at any time, with or without a water right to extinguish an existing fire on private or public lands, structures, or equipment, or to prevent an existing fire from spreading to private or public lands, structures, or equipment endangered by an existing fire..."* If the Department were to allow fire protection flows to be included in estimating RAFN water demand for municipal purposes, it would result in a water right for municipal purposes in excess of the demonstrated continuous future needs. Water flow rates required solely for fire protection may be listed as a separate use on a RAFN application.

Similar to fire protection flows, an additional groundwater point of diversion used to provide redundant supply to a water distribution system should not be considered as justification for water demand on a RAFN application. The Idaho Rules for Public Drinking Water Systems require new community systems served by ground water to have a minimum of two points of diversion if they are intended to serve more than twenty-five connections (IDAPA 58.01.08.501.17). Though the Department recognizes the necessity and value of redundant ground water points of diversion, additional capacity associated with the redundant point of diversion does not constitute an additional increment of beneficial use, justifying a water right. The inclusion of the diversion capacity associated with a redundant point of diversion in the estimation of RAFN water demand results in a water right for municipal purposes in excess of the demonstrated continuous future needs.

Unaccounted for water (UAW) makes up a third category of water. UAW is considered the difference between a water utility's production and its water sales to consumers. Often municipal water providers authorize some types of UAW, including unmetered uses from fire hydrants, street washing, main flushing, sewer cleaning and storm drain flushing, authorized unmetered connections, and reservoir seepage and evaporation. Examples of

[3] The Microsoft Excel file is titled "PopForecastTool.xlsx" and is available to the applicant from the Department upon request.

unauthorized UAW include water distribution system leakage, unauthorized use by theft, abandoned services, and inaccurate or incorrectly read meters. For typical public water supply systems some engineering references estimate a minimum of 2.0% UAW can be anticipated (Prasifka 1988). United Water Idaho maintains monthly accounting of non-revenue water with values typically reported between 3.0-5.0% (Carr 2009). California Department of Water Resources' Urban Water Use in California Bulletin 166-3 reports that the largest percentage of cooperating agencies reported approximately 10.0% UAW in their water supply systems (CDWR 1994). For existing facilities, UAW values greater than 10% should only be approved by the Department as part of a water demand analysis, when the application includes historical diversion records and a technical engineering discussion of the above normal UAW values. For new systems, UAW values greater than 10% are not acceptable. Planning for UAW values in excess of 10% for a new system is contrary to the requirement for conservation of the water resources of the state.

Residential Water Demand Forecasting Methodologies

There are a number of standard recognized approaches for forecasting residential water demand (i.e. RAFN) including judgment based prediction, time extrapolation, disaggregate requirements analysis, single coefficient model development, multi-coefficient model development, econometric demand model development, or a hybrid of one or more of these approaches. Of these approaches, judgment based predictions or water demand based on time extrapolation forecasts are generally viewed as inadequate forecast approaches. Judgment based predictions are simply forecasts of water demand based on the recommendation of an "expert" familiar with the system, who in theory has an "intuitive" feel for water demand specific to the municipal system through prolonged experience with the system. Time extrapolation relies on the prediction of water demand where the only predicting variable is time. For example, 100,000 GPD were needed in the first 10 years, 200,000 GPD were needed in the second 10 year period, and therefore 300,000 GPD will be needed in the third 10 year period. Both of these forecasting techniques lack a technical rigor that is appropriate and necessary when evaluating RAFN water right applications.

Of the remaining methods, one of the most widely implemented approaches, and the one that is presented in detail in this document, is the per capita requirements method, which is a form of the single coefficient model approach. To determine RAFN utilizing this method projected per capita or per household water demand must be applied to the estimated future population within the service area at the end of the planning horizon.

Per Capita Requirements Method

Municipal water demand is often considered a function of population and per-capita consumption[4] (Prasifika 1988). The per capita requirements method relies on the following components to estimate future water demand: (1) projected future number of people or residential services, (1a) if necessary a conversion factor between people and residences[5], (2) average historical water use per capita, and (3) peaking factor(s). A combined future water demand is equal to the product of historical per capita demand, the total number of people or connections, and an appropriate peaking factor.

Per Capita Water Demand

[4] Strictly speaking the "per capita" metric refers to water use per individual person per unit time. The strict and rigorous use of this "per capita" definition is not always in evidence by water right applicants. Oftentimes municipalities do not know specifically how many people are served and thus employ the potentially more useful "per dwelling unit" metric. The terms "single family residence", "single family service connection", "single family dwelling unit" and "equivalent residential unit" can be synonymous with the term dwelling unit. An essential detail of the RAFN application should be the strict definition of the base water demand metric employed by the municipality.

[5] Population forecasts always predict a future population, depending on whether the city is forecasting water demand by person or by service connection the applicant will need to know the number of people per home in order to convert forecast population values into forecast service connections. The U.S. Census Bureau provides data on "persons per household" in their State and County QuickFacts data sets.

Per-capita water consumption is highly variable from region to region and even from one system to another within the same region. Factors that affect per capita water consumption include metering, lot size, climate, age of system, residential irrigation demand, fire protection demand, water rate structure,[6] and physical characteristics of the system. Table 3 summarizes various published values for estimating per capita consumption.

Table 3 - Summary of Published Values of Average Residential Daily Consumption

Published Reference*	Avg. Daily Consumption per Person (GPD)	Avg. Daily Consumption per Home (GPD)
Linaweaver 1967	100	400
Fair 1971	100 – 150	--
Stephenson 2003	50 – 80	150 - 800
Boumann 1998	--	200
Cook 2001	--	194

*Refer to Bibliography (Appendix Item 1) for reference details.

Residential irrigation can have a dramatic effect on per capita water demand. By some estimates water demand to meet peak residential irrigation needs can be 700% of average daily water demand without irrigation (Linaweaver 1967). Many municipal systems provide residential irrigation. However, a growing number of communities and municipalities do not support residential irrigation or have a separate utility specific to irrigation. It is important when evaluating the reasonableness of water demand values to know for certain whether residential irrigation is included in the demand.

Whenever possible, design flows for community water systems (municipal, community, or residential subdivisions) should be based on historical records or studies of similar water use in the area to be served—ideally historical records within the same system will be used. For established municipalities, historical records should be the primary means of evaluating and determining per capita requirements. When a wealth of historical records are available to draw upon, the applicant should rely on the most contemporary values, as they are most likely to reflect future water usage practices.

Frequently, recent data reflect lower per capita usage than older data. This decreasing trend evident in Idaho communities is consistent with national trends over the past three decades and is primarily due to a declining number of residents per household and an increasing pervasiveness of water-conserving (low flow) appliances in the home.[7]

[6] Water rate structures are the frame work in which municipal water providers set the prices for their retail water sales. Examples include flat rate and increasing block rate structures. In a flat rate structure the water user is charged a flat rate regardless of how much water is used. In an increasing block rate structure the unit price for water increases as the volume consumed increases, with prices being set for each block of water use. An increasing block rate structure is much more likely to communicate the value of water and encourage the efficient use of water amongst the users.

[7] For national trends see: Rockaway, P.A. et. al. Residential water use trends in North America. Journal AWWA, 103:2, February 2011. In Idaho, United Water (Boise and SW Ada County) reported that from 2003 to 2011, the average UW customer's water usage has fallen nearly 23 percent. Greg Wyatt, United Water Idaho Vice President and General Manager, attributed the reduced consumption to "successful implementation of a conservation program, as well as weather patterns, plumbing codes and the economy" (United Water 2011). In addition, the City of Meridian has seen not only a reduction in per capita demand, but also in total potable water demand since 2007, despite a rising population. Research conducted for the City's Water Master Plan showed that residents served surface water for irrigation used about 112 gpcpd of potable water while residents that use potable water for irrigation used about 224 gpcpd of potable water (both figures based on ADD). Because all new customers will be served using surface water for irrigation, the overall per capita demand should continue to drop without conservation measures (City of Meridian 2011).

It is not always possible, especially for newer communities, to estimate design flow from historical records as described above. On a case by case basis, the Department can accept calculated estimates for individual systems. There are several "per capita" estimation methods outlining practices and guidelines for estimating domestic design flows currently supported by the Idaho Department of Environmental Quality and the Department. Item 3 of the appendix includes a discussion and comparison of the various methodologies. Item 3 also describes and recommends a method than can be relied upon by the applicant to estimate demand as a last resort when actual historical data does not exist. It is worth emphasizing that the preference in determining per capita demand is always given to actual historical records and that it is only in rare instances that relying upon an artificial means of estimating water demand by the methodology presented in appendix Item 4 is appropriate.

Peaking Factors

In the long term, water demand requirements can vary widely, increasing and decreasing in direct correlation with changes to the population base that is served. Wide variation in water demand occurs in the short term as well. Based upon the transient needs of a static population base, water demand will vary seasonally, daily, and hourly. For example, water demand may be greater during the irrigation season as opposed to the non-irrigation season. Daily in-home demand also increases during times of high use at the start and end of the workday, with daily lows occurring during the middle of the night and early morning. These fluctuations in demand are normally estimated in terms of peaking factors or multipliers, which are often expressed as a percent of average demand.

In general, distribution systems are traditionally designed to carry peak hour flows that typically amount to 200-300 percent of the average day demand, with higher rates usually associated with smaller systems (Robinson and Blair 1984).

When discussing peaking factors, it is important to distinguish between average daily demand (ADD), maximum day demand (MDD), maximum monthly average day demand (MMAD), peak hourly demand (PHD), and peak instantaneous demand (PID). All or some of these terms will often be used in the discussion of a municipal water supply system and as they are used by the Department these terms are defined below. Table 4 summarizes several published ranges of values for residential peaking factors.

Table 4: Summary of Published Peaking Factor Values

Published Reference*	MDD: ADD	PHD: ADD
Dewberry 2002	1.5 - 3.0: 1	2.25 - 4.50: 1
Fair 1971	1.5 - 3.5: 1	1.5 - 3.5: 1
Harberg 1997	1.4 - 1.7: 1	2.0 - 4.0: 1
Linaweaver 1967	2.0: 1	5.0 - 7.0: 1
Lindeburg 1999	1.5 - 1.8: 1	2.0 - 3.0: 1
Mays 2000	1.5 - 3.5: 1	2.0 - 7.0: 1

*Refer to Bibliography (Appendix Item 1) for reference details.

Average Daily Demand (ADD):

The average daily demand is the average of the daily volumes for a continuous 12 month design period expressed as a volume per unit time (typically gallons per day). Often municipal records will only contain monthly or yearly diversion values. In these instances average daily demand for the system is equal to annual diversion volume or the sum of the monthly diversion volumes for one year divided by the number of days in the year.

Maximum Month Average Daily Demand (MMAD):
The maximum monthly average daily demand is the average daily demand from the peak demand month, which is typically July or August when out of home residential water use is at its peak. This value can only be calculated when municipal records contain monthly diversion data. It is obtained by dividing the monthly diversion volume by the number of days in the month, for each month, and selecting the largest monthly value.

Maximum Day Demand (MDD):
The design maximum day flow is the largest volume of flow to be received during a continuous 24 hour period in a calendar year, expressed as a volume per unit time. In order to determine this value, diversion records must have a daily recording interval. Often daily records are not available. In these instances MDD values can be estimated by multiplying ADD or MMAD values by an appropriate peaking factor. If storage is used by the water provider to meet peak demands, then the MDD value represents the maximum diversion rate that should be authorized by the RAFN water right permit.

Peak Hourly Demand (PHD):
The design peak hourly flow is the largest volume of flow to be received during a one hour period expressed as a volume per unit time. In order to determine this value, diversion records must have an hourly recording interval. Municipal data with an hourly recording interval usually does not exist for the entire water system and may only exist for a representative sample of the existing service area for the specific requirement of determining peaking factors. In instances where hourly data does not exist at all, an alternative means of estimating the peaking factor must be employed. If storage is not used by the water provider, then the PHD value represents the maximum diversion rate that should be authorized by the RAFN water right permit.

Peak Instantaneous Demand (PID):
The peak instantaneous demand is a municipal water supply system's anticipated maximum instantaneous water flow. PID is typically met through a combination of direct diversion from surface water and/or wells and the release of storage water. PID should not be confused with the maximum diversion capacity of some or all points of diversion associated with a municipal water supply system (flow into the system), which is an altogether different value that has historically been used by the Department during field examinations as a quantification of beneficial use. In municipal systems PID usually exceeds diversion capacity, with storage releases making up the difference. The PID design value can be appropriate in the sizing of water mains, storage capacity, and other appurtenances associated with a municipal water supply system, but it is not typically recognized in the field of water supply planning and forecasting as an appropriate design standard for projecting future system demand. As such, the use of PID in establishing a diversion rate in association with a RAFN application is generally considered unsound and unlikely to be approved by the Department. This position is consistent with the Idaho Rules for Public Drinking Water Systems, which require that public drinking water system be designed to provide either PHD or the MDD plus equalization storage (IDAPA 58.01.08 501.03).

Ideally, an engineering report or comprehensive plan should be submitted to the Department, which includes the records, studies, and considerations used in arriving at design flows, including all relevant peaking factors. In the absence of historical data or studies, the peaking factor(s) used to determine the diversion rate of the RAFN permit could be estimated from an analogous system. To be considered analogous, water systems should have similar characteristics including demographics, housing sizes, lot sizes, climate, water rate structure, conservation practices, use restrictions, and soils and landscaping. If neither historical data nor an analogous system can be found to estimate peaking factors, then the default peaking factors summarized in Table 5 may be used by the applicant.

Table 5 - Department Standard Default Peaking Factors (PF)

Ratio	PF
MDD:ADD	2.0
MDD:MMAD	1.3
PHD:ADD	3.0

As an example on how to use the peaking factors in Table 5, if the applicant has a known ADD value, the MDD value can be determined by multiplying the ADD value by two. For peaking factors greater than described in Table 5, the applicant will need to provide a technical engineering discussion supporting the numbers. It is insufficient for an applicant to simply reference a published value or claim a value as a standard of engineering practice in defense of values greater than those presented in Table 5.

Storage and the Affects of Storage on Peaking Factors

Municipal water systems can apply a number of strategies to meet the system's peak demand. Some municipalities rely exclusively on the source (surface water diversions and/or wells and booster pumps) to meet peak demand, while other municipalities may rely on a combination of source and storage facilities to meet peak demand. Storage is a component of a municipal system consisting of tanks and reservoirs that physically store water to provide water pressure, equalize pumping rates, equalize supply and demand during periods of high consumption, and provide water for fire fighting and other emergencies during periods of power outages[8]. In some places, authorities overseeing water system design mandate that storage be included in a water supply system and that peak demands be met partially by storage. As an example, the Washington State Department of Health requires that demands in excess of the MDD (i.e. PHD and PID) be met by storage (WSDOH 2009). In Idaho, the Idaho Department of Environmental Quality (DEQ) requires storage if source capacity is less than PHD, in these instances storage is required such that the difference between source demand and PHD is made up by equalization storage[9]. Some references consider it poor engineering practice for a public drinking water system to provide no storage capacity whatsoever (Lindeburg 1999).

It is important for the Department to identify to what extent storage will be utilized by a municipality to meet demand. The diversion rate associated with a RAFN application should reflect whether source alone will meet PHD or whether a combination of source and storage will meet PHD.

Per Capita Demand Conclusion

In conclusion, the following steps can be used to forecast the residential water demand utilizing the per capita demand forecasting approach:

1. Establish the ADD per capita water demand unit (person or residence) and quantity, preferably from historical diversion records.
2. Select the design demand value, typically PHD when source alone will meet the demand or MDD when a combination of source and storage will meet demand.

[8] The storage being discussed should not to be confused with a seasonal storage component of a water right, which is water stored for use at some time in the future and is described on the water right as storage.

[9] Design File Note: Reservoir Sizing – Public Water Systems (April 30, 1998) states, *"The source capacity of a water supply must at least equal [MDD]…If the source capacity is equal to or greater [than] [PHD], then no storage is needed other than pressure tanks to prevent frequent cycling. If the source capacity lies between [MDD] and [PHD], then storage is required as defined in this Guidance."*

3. Multiply the ADD by the appropriate peaking factor to establish the per capita water demand design value.
4. Establish the projected future total population.
5. If needed divide the population projection by the "persons per home" value to arrive at the total number of residences to be served.
6. Multiply the total number of people or residences by the per capita water demand design value to determine the total system-wide residential demand.
7. Apply necessary unit conversions to obtain the permitted rate units of cubic feet per second (CFS)

Non-Residential Forecasting

For many municipal systems residential water demand makes up the vast majority of total demand. As such, many water supply systems, especially smaller systems, are designed mostly to serve single family residences. If non-residential water is identified as being a significant portion of total demand it can be taken into consideration when establishing RAFN. Described below are two methods for estimating this demand.

The first method utilizes the concept of an equivalent residential unit (ERU). An ERU is a unit of measure used to represent the amount of water consumed by a typical full-time single-family residence (WSDOH 2009). ERUs are synonymous with equivalent domestic units (EDU) as defined by the Idaho Department of Environmental Quality (IDAPA 58.01.08 033.42). ERUs can be used to equate non-residential uses and/or multi-family residential uses to the amount used by a single-family residence. ERUs associated with all non-residential uses are determined and added to the ERU count derived from actual single-family residences to arrive at a total demand.

The disaggregate requirements forecasting technique is another common approach to estimating non-residential water demand. In disaggregate forecasting the water user identifies the demand of water associated with any non-residential uses such as irrigation, commercial facilities, industrial facilities, public facilities, recreation uses, etc. and sums them to arrive at a total non-residential water use demand. Historical records are often the best source, and the source preferred by the Department, for estimating the demand associated with non-residential uses. A qualified analogous system can be another recognized source of information for estimating disaggregate water demands.

A tabular summary of average daily demands for a variety of disaggregate uses (Table 6) is presented in Appendix Item 4. Table 6 has been adapted from a number of sources and does not represent the final authority on the water demand values presented. It should be noted that the values in Table 6 are average daily values. It may be necessary to apply a peaking factor or multiplier to the values to obtain a MDD or PHD equivalent value.

Other sources of disaggregated water demand values that may provide additional guidance include individual engineering references, individual water demand studies, the Uniform Plumbing Code, the American Water Works Association, and the Idaho Department of Environmental Quality. When properly referenced and applied, all of the sources previously described can be used if historical or analogous data are missing.

Regarding RAFN demand for the irrigation of lawns within community open spaces, parks, golf courses, cemeteries, etc., and the evaporative loss of water associated with decorative and aesthetic ponds, demand can be established by the appropriate evapotranspiration (ET) values as published by ET_Idaho (Allen and Robison 2009). In recognition of the contribution of precipitation to irrigation requirement it is appropriate to use the precipitation deficit (P_{def}) values in place of actual ET (ET_{act}). Appropriate values would include utilizing data from the nearest ET_Idaho station and as available, using the categories of *"Precipitation Deficit (Grass – Turf (lawns) – Irrigated)"* for P_{def} associated with lawns and grass and *"Precipitation Deficit (Open water-*

shallow systems (ponds, streams))" for P_{def} associated with municipal ponds and water features. When estimating diversion rates associated with P_{def} it is appropriate to use the 20% exceedance (80th percentile) 3-day moving average rate from the month with the largest ET rates. In light of the conservative methods allowed in determining P_{def}, quantification of the demand associated with ET loss from lawns and open water bodies should not include the use of peaking factors or multipliers.

3. Permitting RAFN Water Rights

For an application for RAFN to be accepted by the Department it must include a current application correctly and completely filled out, a municipal water right application checklist[10] completely filled out, the appropriate fees, and a detailed narrative or report summarizing the methods used to determine RAFN. The report must specifically address the four fundamental components of RAFN as identified in section 2 of this document. Lastly, the application package must contain a summary of the applicant's existing municipal water rights portfolio and some form of gap analysis.[11]

Existing Municipal Water Rights Portfolio

In order for an applicant to formulate a requested RAFN proposal, understanding of the future demand is only half the equation. The applicant must also understand the existing supply of water available to it. Therefore, an evaluation or accounting of all existing municipal water right permits, licenses, decrees, and claims is needed to establish the water supply authorized on paper. This includes the review of water right permits and water rights designated municipal, as well as existing permits and rights with other designations that are beneficially used under the contemporary "municipal purposes" umbrella as defined in I.C. §42-202B (6).

Final Determination of RAFN Permit Diversion Rate (Gap Analysis)

An application for RAFN should contain completed analyses of the future water demand (residential, non-residential, and UAW) and the existing water right portfolio. The future water demand calculations should not include current or future fire flow requirements, as Idaho Code does not require a water right to engage in fire fighting activities (§42-201). Neither should the requirement of redundant groundwater points of diversion be used as justification for an additional increment of future beneficial use.[12] The final RAFN water right permit diversion rate is typically calculated by taking the combined projected demand of residential and non-residential water use, multiplied by a factor to account for UAW, less the total diversion rate of water already provided in the applicant's current water rights portfolio.[13]

$$(Municipal\ Demand\ in\ Ending\ Year)\ x\ (UAW\ Factor) - (Existing\ WR\ Diversion\ Rate) = (RAFN\ Permit\ Diversion\ Rate)$$

The municipal provider's water rights portfolio must include the water rights already held by the provider for municipal purposes and may also include any of the following:

- Rights held by the municipal provider for other purposes such as irrigation

[10] A copy of the municipal water right application checklist is included in the appendix as Item 5.

[11] Gap analysis is used in this instance to refer to the analysis of the difference (gap) between what will be needed and what is currently provided for by the existing water right portfolio.

[12] Each point of diversion, including alternate points of diversion to provide a redundant supply, requires authorization under a valid water right.

[13] Alternatively, some municipal water systems with mixed sources of water supply divert water under the authority of water rights with late water right priority dates. This leaves the municipal provider susceptible to curtailment, a regulation based on water right priority date. In such a case, when the curtailment of water rights associated with one source (ex. surface water) do not limit the exercise of water rights diverting from a second source (ex. ground water), the Department may find the municipal provider will use its RAFN water right as an alternative supply. This would result in combined flow limits between the existing municipal water rights and a RAFN permit.

- Rights held by other entities, such as homeowner's associations for municipal use within the proposed RAFN service area
- Rights held by other entities for non-municipal uses within the proposed RAFN service area

The RAFN applicant should explain the assumptions regarding the inclusion or exclusion of these rights in the gap analysis. If the rights will be used for future municipal demand within the proposed RAFN service area, regardless of ownership, the rights must be subtracted from the reasonably anticipated future needs projection or counted among the water rights available to meet the reasonably anticipated future needs.

Item 6 of the Appendix is a detailed example of the determination of RAFN for a hypothetical RAFN application including analysis of RAFN service area, planning horizon, population projection, water demand, and existing water right portfolio.

Final Determination of RAFN Permit Volume

RAFN water right permits should not be limited by volume except in those instances where a volume limitation is necessary to protect the water supply source.

RAFN Permit Approval Conditioning

When issuing a RAFN water right permit the Department will include standard approval conditional language that identifies the permit for reasonably anticipated future needs (X64). All permits that do not have a condition designating RAFN status will be deemed as non-RAFN permits by the Department. All RAFN permits shall include approval conditions requiring the following:

- Filing of the proof of beneficial use no sooner than 4.5 years after the permit is issued (standard condition 236)
- Full system capacity constructed by the date the permit holder submits proof of application of water to beneficial use (standard condition 909),
- Inclusion of an updated RAFN analysis with the submittal of the proof of beneficial use (standard condition 237),
- Capacity installed for redundancy or for fire protection should be excluded when quantifying the amount of water developed for municipal purposes (standard condition 926),
- Submittal of a field examination and report conducted and prepared by a Certified Water Rights Examiner (CWRE) with the proof of beneficial use (standard condition 910).

Amending a permit from non-RAFN to RAFN

Consistent with Application Processing Memo #18 (Administrative Memo adopted October 19, 2009) and Department policy, a permit issued to a municipal provider that does not provide for RAFN cannot be later amended to gain the benefits of a RAFN permit.

4. Licensing RAFN Water Rights

With the submittal of proof of beneficial use in association with a RAFN water right permit, the permit holder is required to submit a field examination report completed by a CWRE. As required by I.C.§42-217, the statement of completion for proof of beneficial use shall include a description of the extent of use and a revised estimate of RAFN, containing a revised description of the RAFN service area, a revised planning horizon, and appropriate supporting documentation. Appropriate supporting documentation means a revised analysis of the same RAFN support material submitted at the time of application reflecting the system as it exists at the end of the permit development period. Also included should be a revised gap analysis including an updated portfolio of existing water rights. If proof is not submitted by the proof due date and an extension to the permit development period has not been granted, as provided under Idaho Code §42-204, the permit shall lapse and be of no further force nor effect as required under Idaho Code 42-218a.

Review of the Description of the Extent of Use

At the time of licensing the Department must first review the "description of the extent of use", including accompanying evidentiary material, and make a determination of the extent of beneficial use that has occurred and whether the permit should be licensed in part or in full. If the permitted amount has been beneficially used already, because the provider experienced unexpected rapid growth, no further review is needed and the full permitted amount can be licensed.

Idaho Code §42-219(B) states *"A license may be issued to a municipal provider for an amount up to the full capacity of the system **constructed or used** in accordance with the original permit…" (emphasis added)*. IDWR interprets the restrictive language in §42-219 to limit the authority of the agency to only license RAFN permits up to the *full capacity of the system constructed or used*. Full capacity constructed means significant infrastructure has been constructed to accommodate delivery of water throughout the RAFN service area. Full capacity constructed entails more than engineering plans or in-place financing.

Components of significant infrastructure will always include at least the following:

- For ground water diversions a constructed well or series of wells and their associated capacities, for surface water diversions constructed diversion facilities and their associated capacities, or for mixed sources some combination thereof.
- Storage tanks when included as an integral part of the design.
- Trunk lines (major supply conduits) sized and constructed to anticipate service beyond the physically constructed limits of the delivery system at the time proof of beneficial use is submitted.

Significant infrastructure does not have to include the following:

- Service laterals (i.e. stub outs to lots that have not been built out)
- Main line and/or lateral line extensions beyond the physically constructed limits of the delivery system at the time proof of beneficial use is submitted.
- Water quality treatment facilities for diversions in excess of the demand at the time proof of beneficial use is submitted.
- Pumping capacity for diversion in excess of the demand at the time proof of beneficial use is submitted.

Significant infrastructure will never include the following:

- Diversion works and distribution system capacity available for fire protection and/or redundant supply. (The additional capacity provided does not require a water right, so licensing the additional capacity would unintentionally increase the estimated demand to provide for unsupported future growth.[14])

Therefore, when reviewing the "description of the extent of use" and accompanying documentation, Department staff must review the improvements that have been made, which will typically lie somewhere between full system build out and no system build out, to determine to what extent the RAFN permit should be licensed.

Review of Revised RAFN Characteristics Including Diversion Rate

With the proof of beneficial use submittal the permit holder should submit a revised description of the RAFN specifically addressing each of the four fundamental components of a RAFN package: (1) service area; (2) planning horizon; (3) population projections within the planning horizon; and (4) water demand. Department

[14] Small municipal systems may not be designed for peak demand and fire flow. In such a case, the available capacity might justify the full capacity of the system.

staff shall review the revised RAFN in a manner similar to the application review process as detailed in sections 2 and 3.

At the time of licensing, department staff can update the RAFN service area, the planning horizon, and diversion rate as appropriate based on the review of new material and the field examination report. Diversion rate and planning horizon can only be amended downward to reflect a revised lowered future water demand. If new RAFN analysis at the time of licensing indicates an increase in water demand the additional diversion rate and/or longer planning horizon associated with the increased demand must be pursued under a new application for permit or transfer.

Final Determination of RAFN License Volume

RAFN water right licenses should not be limited by volume except in those instances where a volume limitation is necessary to protect the water supply source.

RAFN License Approval Conditioning

When issuing a RAFN water right license the Department will include standard approval conditional language that identifies the license for reasonably anticipated future needs (X64). All licenses that do not have a condition designating RAFN status will be deemed as non-RAFN licenses by the Department. All RAFN licenses shall also include approval conditions requiring that all future needs must be constructed and used by the end of the planning horizon (109) and that the place of use (POU) associated with a RAFN water right shall not be changed to a location outside of the service area (110).

Nonuse of RAFN Water Rights

If sufficient proof of beneficial use is submitted before the end of the permit development period and the municipal water right is licensed for an amount of water for RAFN, the requirement that the system needed to provide water for the RAFN be fully constructed and used by the end of the municipality's planning horizon will continue as a condition of the license. If the municipal provider fails to construct and use the complete system by the end of the permit planning horizon, or the anticipated future needs do not materialize by the end of the planning horizon, the quantity of water under the license may be revised to reflect the needs that actually exist at the end of the planning horizon.

5. Transfer of RAFN Water Rights

The portion of any water right described with a beneficial use of RAFN cannot be transferred or modified to have a beneficial use other than RAFN. However, water rights with beneficial uses other than RAFN can be transferred or modified to a RAFN use.

Idaho Code §42-222 governs the transfer of water to and from RAFN status. When a transfer proposes changing the nature of use of a water right to municipal purposes for RAFN, the municipal provider shall provide to the Department sufficient information and documentation to establish the transfer applicant qualifies as a municipal provider at the time of application, is providing water to a municipality or municipalities, and that the RAFN, the service area, and the planning horizon are consistent with Idaho Code. Supporting documentation must be included with the transfer application including the same RAFN support material that would be submitted with an RAFN application as outlined and described in Section 2 of this document. As discussed in Section 3, gap analysis including a current portfolio of existing water rights must also be included with the transfer application. A transfer application proposing to use a RAFN water right as an alternate source in times of curtailment should include justification for the proposal with the application.

Water rights or portions of water rights that identify RAFN as the beneficial use shall not be changed to a place of use outside the RAFN service area or to a new nature of use (I.C. §42-222). The effect of this statutory

language eliminates the modification of a RAFN water right by transfer for anything other than the addition of a point or points of diversion.

Final Determination of RAFN Transfer Volume

RAFN water rights created by transfer from an existing non-RAFN municipal right should not be limited by volume except where a volume limitation existed in connection with the water right's use prior to the transfer. A transfer to change the nature of use of an established water right from non-municipal to municipal purposes for RAFN shall limit the volume of water to the historic consumptive use established prior to the change.

RAFN Transfer Approval Conditioning

When issuing a RAFN water right transfer the Department will include standard approval conditional language that identifies the water right for reasonably anticipated future needs (X64). All transfers that do not have a condition designating RAFN status will be deemed as non-RAFN water rights by the Department. All RAFN transfers shall also include an approval condition requiring that the system must be fully constructed and used by the end of the planning horizon (109). Finally, all RAFN transfers shall include an approval condition limiting the RAFN to use within the service area and restricting a change in the purpose of use (110).

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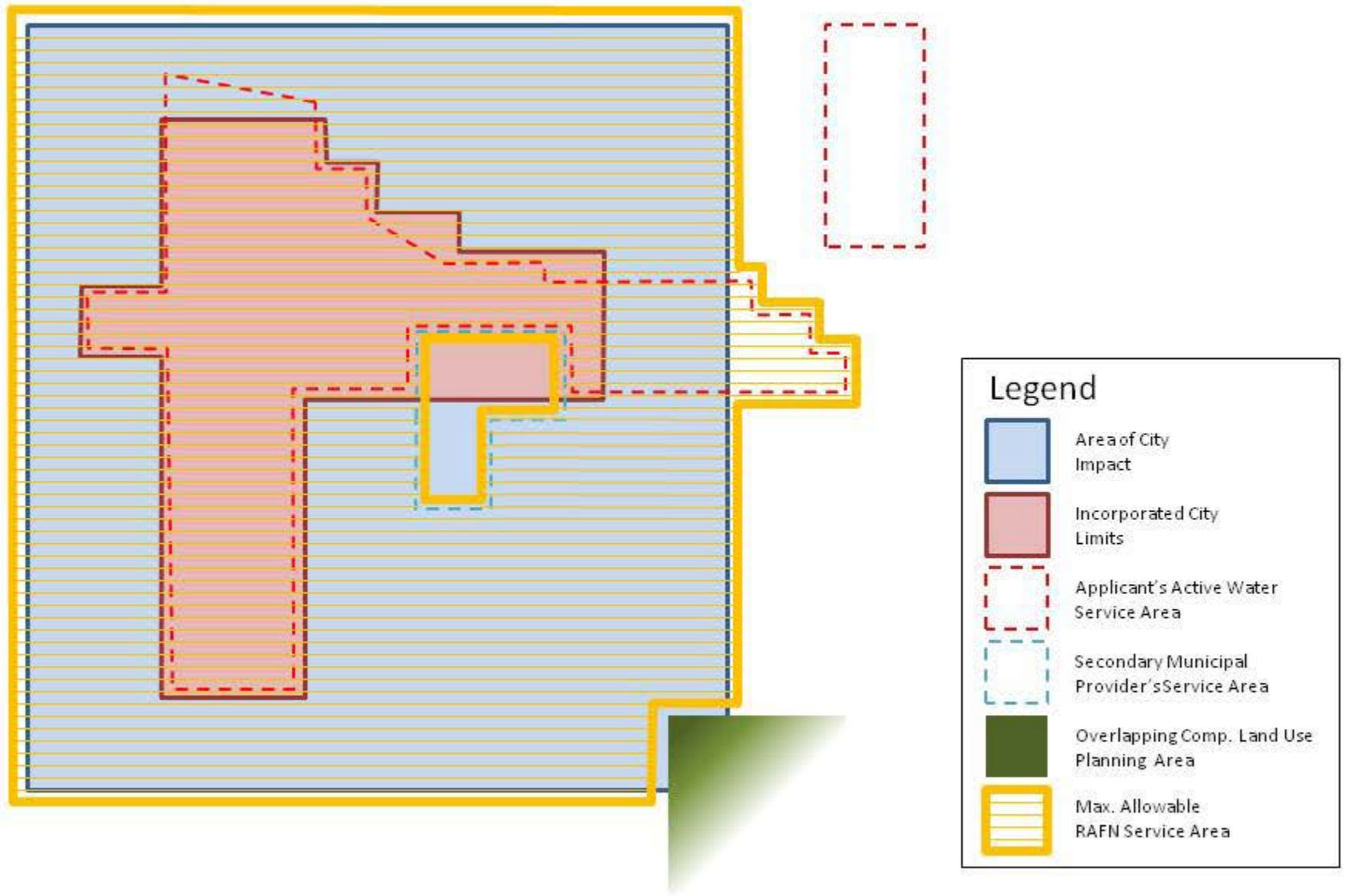


Appendix Item 2 - Illustrative Example of Delineation of Maximum Allowable RAFN Service Area

Appendix Item 3
Comparison of the Idaho Department of Water Resources and the Idaho Department of Environmental Quality Methodologies for Quantifying Residential In-Home Use

The Department's Administrative Memorandum Application Processing #22 (AP22) dated June 4, 1980, addresses the 'Definition of Domestic' and provides guidance, in the form of a chart (Figure 1), for quantifying the rate of flow necessary for the in-house culinary use for multi-household systems. The memo states, "*The flow identified on this graph should be used as a guideline in determining and reviewing domestic use rates of flow on applications for permit with more than one hookup. Greater flow can be accepted if justified."* Figure 1 is titled "Maximum Instantaneous Water Requirements for Domestic Use" and depicts a power function relationship between the number of houses served (N) and the water demand (Q) in cubic feet per second (CFS). The following equation represents the relationship depicted on Figure 1 of AP22 and allows for the calculation of Q strictly as a function of N.

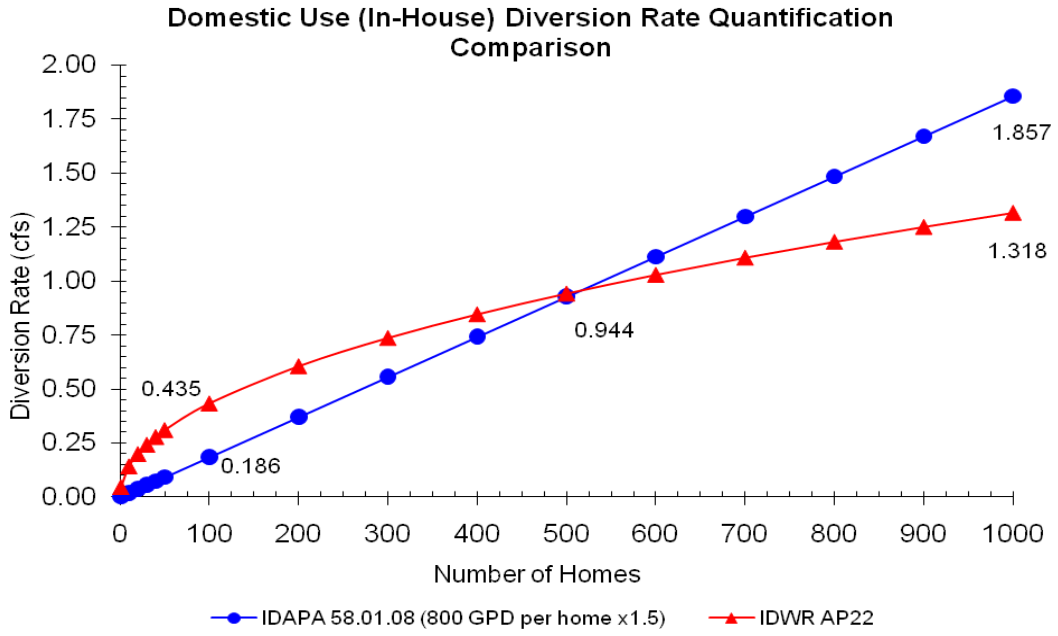
Eqn. 1: $Q\ (CFS) = 0.0473*(N)^{0.4817}$

AP22 does not make clear whether "maximum instantaneous water requirement" is equivalent to peak hour demand (PHD), peak instantaneous demand (PID), or some other value. Nonetheless, for communities ranging from 2 to 1,000 homes this has historically been the equation that Department staff used to quantify the permitted diversion flow rate specific to <u>in-home domestic use</u> when no other rate was justified. It does not account for demand associated with out-of-home uses, namely irrigation.

The Idaho Rules for Public Drinking Water Systems administered by DEQ mandate the capacity of public drinking water systems to be a minimum of 800 gallons per day (GPD) per residence (IDAPA 58.01.08 552-01(a)). This is equivalent to 0.6 gallons per minute (GPM) and 0.001 CFS. The rules define this amount as the "design maximum day demand" (MDD) exclusive of irrigation and fire flow requirements (IDAPA 58.01.08 552-01(a.i)). The rules go on to say that the MDD may be *"less than 800 GPD if the water system owner provides information that demonstrates to the [Department of Environmental Quality's] satisfaction the maximum day demand for the system, exclusive of irrigation and fire flows, is less than 800 GPD per residence"*. The value of 800 GPD per residence was likely initially derived from the Federal Housing Administration's minimum design standards (FHA 1965). The rules do not address peaking factors. However, if we use the standard values from Table 5 we can determine a PHD of 1,200 GPD per residence (PHD = 1.5*MDD). The following figure compares the water demand functions for 1 to 1,000 homes as derived from AP22 and the Idaho Rules for Public Drinking Water Systems.

At first glance it appears there is a conflict between AP22 and the Idaho Rules for Public Drinking Water Systems. This conflict could potentially lead to a deficient municipal water supply system with a combined water right diversion rate, less than the diversion rate mandated by the Idaho Rules for Public Drinking Water Systems. However, such a conflict does not exist for two reasons. First, the Idaho Rules for Public Drinking Water Systems address the concept of "storage" and the ability of equalization storage, in sufficient quantity, to compensate for differences between a water system's maximum pumping capacity and peak hour demand. Furthermore, the rules also address the ability of equalization storage plus fire suppression storage, both in sufficient quantity, to compensate for the difference between a water system's maximum pumping capacity and peak demand plus fire flow, in those systems that provide fire flow (IDAPA 58.01.08 003-71). Secondly, the 800 GPD in-home use value is only valid when MDD flows in the system are equal to or greater than 800 GPD. If actual MDD flows are less than 800 GPD they can be recognized as a valid demand for the system (IDAPA 58.01.08 552-01(a.iii)).

One obvious deficiency in both methods is their lack in quantifying an irrigation demand component, leaving the task of determining total residential demand only partially completed. Another deficiency in the Idaho Rules for Public Drinking Water System is their treatment of demand as a linear function, as it is commonly accepted that for larger communities, demand is not linear with respect to number of homes (Ameen 1965).



It is desirable for the Department to have a single recommended method for quantifying residential demand that addresses both in-home and out of home uses including irrigation. Such a method was developed by the U.S. Department of Housing and Urban Development (DHUD) in their publication titled *A Study of Residential Water Use* (Linaweaver 1967). This method has the added advantage of being currently adopted and under implementation by the Idaho Department of Environmental Quality (DEQ 2005). The DHUD method is presented below in detail and it is recommended that this method be used by applicants and the Department in determining residential demand for those communities for which actual historical demand data does not exist.

The DHUD method calculates the maximum daily demand (Q_{MDD}) and peak hourly demand (Q_{PHD}) as functions of average daily in-home use (Q_{ADD}), consumptive use associated with residential irrigation, and the variability associated with the magnitude of the input factors influencing the demand and the diversity effect associated with the number of dwelling units or residences. The following equations (equations 2 through 8) have been derived from the DHUD publication with some modifications specific to Idaho and the Department. The following equations express the steps necessary to determine values for Q_{MDD} and/or Q_{PHD}.

Eqn. 2: $Q_{MDD} = Q_{ADD} + C*(L_S)*(P_{def}) + 2*(\sigma_{MDD})$, where

Q_{MDD}: maximum daily demand (GPD)
Q_{ADD}: average daily in-home demand per residence (GPD)
C: unit conversion constant
L_S: average irrigable area in acres per unit

P_{def}: precipitation deficit for irrigated turf grass, i.e. lawn (inches)
σ_{MDD}: variability in magnitude of factors and the number of dwelling units

Equation 3 allows for the calculation of Q_{ADD} as a function of average home value from 1965. Equation 4 is used to adjust contemporary home values by inflation to determine historical home values from 1965. When desired for simplicity or lack of data, a Q_{ADD} value of 250 GPD can be substituted for the results of Equation 3 if desired by the applicant.

Eqn. 3: $Q_{ADD} = 3.46*V_{1965} + 157$, where

V_{1965}: average market value in $1000 per residential lot in 1965.

Eqn. 4: $V_{1965} = V_{2010}/(1.044)^{46}$, where
V_{2010}: average market value in $1000 per residential lot in 2010.

Equation 5 is used to calculate the average irrigable area term (L_S) and assumes that irrigation practices are uniform across the entire community. If a source other than the municipal water system is used for irrigation (i.e. surface water irrigation water rights) the L_s term should equal zero.

Eqn. 5: $L_S = 0.803*(W)^{-1.26}$, where

W = gross housing density in dwelling units per acre

Equation 6 is used to calculate the variability term, σ_{MDD}.

Eqn. 6: $\sigma_{MDD} = [(1{,}090 + 166{,}000*L_S^2) + (5{,}480{,}000/n)]^{1/2}$, where
n: number of residences or residential lots

The method presented herein also supports the calculation of a Q_{PHD} as a function of the Q_{MDD} value previously determined. The following equation allows for the calculation of Q_{PHD}.

Eqn. 7: $Q_{PHD} = 2.02*(Q_{MDD}) + 334 + 2*\sigma_{PHD}$, where
σ_{PHD}: variability in magnitude of factors and the number of dwelling units

Equation 8 is used to calculate the variability term, σ_{PHD}.

Eqn. 8: $\sigma_{PHD} = [(2.02*(1{,}090 + 166{,}000*L_S^2)) + (12{,}300{,}000/n)]^{1/2}$, where
n: number of residences or residential lots

The method presented and described above is automated in a spreadsheet tool prepared by the Department titled "ResidentialDemandCalculator.xlsx" and is available from the Department upon request.

Appendix Item 4

Table 6 - Summary of Average Daily Non-Residential Water Uses

Description of Water Use	Water Consumption	Units
Airport (per passenger)	3-5	GPD
Apartment, multiple family (per residence)	50	GPD
Bank (per SF)	0.05	GPD
Barbershop (per chair)	55	GPD
Bathhouse (per bather)	10	GPD
Beauty Salon (per station)	95	GPD
Boardinghouse (per boarder)	50	GPD
Camp:		
Construction, semi-permanent (per worker)	50	GPD
Day, no meals served (per camper)	15	GPD
Luxury (per camper)	100-150	GPD
Resort, day and night (per camper)	50	GPD
Tourist, central bath and toilet (per person)	35	GPD
Car Wash (per SF)	4.9	GPD
Cottage, seasonal occupancy (per resident)	50	GPD
Club		
Country (per resident member)	100	GPD
Country (per nonresident member present)	25	GPD
Highway Rest Area (per person)	5	
Hotel		
Private baths (2 persons per room)	50-68	GPD
No private baths (per person)	50	GPD
Institution other than hospital (per person)	75-125	GPD
Hospital (per bed)	200-400	GPD
Laundry/Laundromat		
Self-serviced (gallons per customer)	50	GPD
Self-serviced (gallons per machine)	400-500	GPD
Livestock Drinking (per animal)		
Beef, yearlings	20	GPD
Brood sows, nursing	6	GPD
Cattle or steers	12	GPD
Dairy	20	GPD
Dry cows and Heifers	15	GPD
Goat or sheep	2	GPD
Hogs/swine	4	GPD
Horse or mules	12	GPD
Livestock Facilities		
Dairy Sanitation (milk room)	500	GPD
Floor flushing (per 100 SF)	10	GPD
Sanitary Hog Wallow	100	GPD
Motel		
Bath, toilet, and kitchen (per bed space)	65-100	GPD
Bed and toilet (per bed space)	50	GPD

Table 6 Continued - Summary of Average Daily Non-Residential Water Uses

Description of Water Use	Water Consumption	Units
Parks		
Overnight, flush toilets (per camper)	25	GPD
Trailer, individual bath units, no sewer connection (per trailer)	25	GPD
Trailer, individual baths, connected to sewer (per person)	50	GPD
Picnic Ground		
Bathhouses, showers, and toilets (per picnicker)	20	GPD
Toilet facilities only (gallons per picnicker)	10	GPD
Poultry (per 100 birds)		
Chicken	5-10	GPD
Ducks	22	GPD
Turkeys	10-25	GPD
Restaurant		
Toilet facilities (per patron)	7-10	GPD
No toilet facilities (per patron)	2.5-3	GPD
Bar and cocktail lounge (add. quantity per patron)	2	GPD
Toilet facilities (per seat/chair)	24-50	GPD
School		
Boarding (per pupil)	75-100	GPD
Community college (per student and faculty)	15	GPD
Day, cafeteria, gym, and showers (per pupil)	25	GPD
Day, cafeteria, no gym or showers (per pupil)	20	GPD
Day, no cafeteria, gym, or showers (per pupil)	15	GPD
Service Station		
Service Station (per vehicle)	10	GPD
Service Station (per SF)	0.18	GPD
Store/Retail		
Department, no food service (per SF)	0.04	GPD
General (per bathroom stall)	400	GPD
General (per SF)	0.05	GPD
Shopping Center/Malls (per SF)	0.25	GPD
Swimming pool (per swimmer) maintenance (per 100 SF)	10	GPD
Theater		
Drive-in (per car space)	5	GPD
Movie (per auditorium seat)	5	GPD
Worker		
Construction (per person per shift)	50	GPD
Day (school or offices per person per shift)	15	GPD
Factory (gallons per person per shift)	15-35	GPD

Table 6 has been adapted from the following sources: Dewberry 2002, Prasifka 1988, and WSDOH 2009.

Appendix Item 5
Municipal Water Right Application Checklist

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

MUNICIPAL WATER RIGHT APPLICATION CHECKLIST
FOR AN APPLICATION TO APPROPRIATE WATER FOR MUNICIPAL PURPOSES

An application to appropriate water for municipal purposes must be prepared in accordance with the requirements listed below to be acceptable for processing by the Department. There are two types of permits for municipal water use. The first type of municipal permit provides water for reasonably anticipated future needs (**RAFN**) over a defined planning horizon.[1] The second type of municipal permit, called non-RAFN, provides water solely for use to meet needs that will arise in the near-term (five years).[2] A **non-RAFN** permit may have an annual volume limitation associated with it. Each type of municipal water use has a distinct set of review requirements.

Applicant Name: _____

1. Type of Municipal Provider. Applicant must qualify as a Municipal Provider to obtain a municipal water right. See Idaho Code § 42-202B (5). Check one:

   ☐ Type 1 – Municipality
   ☐ Type 2 – Franchise or political subdivision supplying water to a municipality
   ☐ Type 3 – Corporation or association regulated as a "public water supply" system by IDEQ

   ☐ Attach documentation of qualification as a Municipal Provider. See Idaho Code § 42-202(2).

2. List existing Water Rights (permits, licenses, decrees, and beneficial use claims) available to the applicant for municipal needs. These rights may or may not have a purpose of use expressly defined as "municipal". Include a separate attachment as needed.

Right Number	Nature of Use	Diversion Rate (cfs)	Annual Vol. (acre-feet)	Service Area

3. List the total diversion rate from Item 2. Be sure to account for any combined diversion rate limits in the approval conditions of each right listed. _____ CFS (total from 2)

4. List the total volume from Item 2. Be sure to account for any combined volume limits in the approval conditions of each right listed _____ AF (total from 2)

[1] For a thorough discussion of RAFN water rights, see IDWR's *Recommendations for the Processing of Reasonably Anticipated Future Needs (RAFN) Municipal Water Rights at the Time of Application, Licensing, and Transfer.*
[2] For a thorough discussion of non-RAFN water rights, see IDWR's Application Processing Memorandum No. 18.

5. Planning Horizon. See Idaho Code § 42-202B (7). Check one:

☐ RAFN. Specify planning horizon: ___ years. Ending year: 20___. Go to Item 6.
☐ Non-RAFN (≤5 years). Go to Item 7.

6. If application is for RAFN:

☐ Attach justification for planning horizon. See Idaho Code § 42-202(2) and § 42-202B(7).
☐ Attach description of service area. See Idaho Code § 42-202(2) and § 42-202B(9).
☐ Attach population projection within the service area over the planning horizon. See Idaho Code § 42-202(2) and § 42-202B(8).
☐ Attach evaluation for demand within the service area over the planning horizon. See Idaho Code § 42-202(2) and § 42-202B(8).
☐ Attach any supporting documentation relevant to the RAFN application, such as comprehensive plans or other planning documents.

Does demand exceed the totals listed in Items 3 and 4?

Y	N	
☐	☐	Rate?
☐	☐	Volume?

If the answer is "No" to both rate and volume and a new point of diversion is needed, file a transfer application pursuant to Idaho Code § 42-222(1).

7. If application is for non-RAFN:

When submitting proof of beneficial use, non-RAFN permit holders will be required to show that water was diverted for an additional increment of beneficial use over existing water rights during the authorized development period, which may be up to five years from the date of approval. Do existing demand and short term needs exceed the combined authorizations from the existing water rights listed in Items 3 and 4?

Y	N	
☐	☐	Rate?
☐	☐	Volume?

If the answer is "No" to both rate and volume and a new point of diversion is needed, file a transfer application pursuant to Idaho Code § 42-222(1).

Appendix Item 6
Example Determination of RAFN for a Small Rural Municipality

Description of Municipality

Gem City is in the process of acquiring grant money to create a master water plan and expand their existing municipal water system. It has taken this opportunity to apply for a permit for RAFN water rights by conducting a thorough analysis of the future projected demands and their existing water right portfolio. Gem City is located in Benewah County. Gem City currently uses storage to meet demands in excess of their maximum day demand (MDD) and plans to continue this practice into the future. Gem City has recently updated their comprehensive plan (comp plan) including updates to their incorporated city limits and their area of city impact as depicted in Appendix Item 3. The planning horizon associated with the recently adopted comp plan is 20 years. Gem City does not have a current master water plan.

Gem City has rigorously defined their non-residential water use as follows: one hospital (20 beds), one barber shop (5 chairs), one beauty salon (5 stations), one car wash (1,000 square feet (SF)), one Laundromat (10 wash machines), one motel (30 bed spaces), three restaurants (combined seating 80), one elementary school with cafeteria and no gym or showers (100 students), one middle school with cafeteria, gym, and showers (60), and one high school with cafeteria, gym, and showers (60 students), one service station (1,000 SF), and 45,000 square feet of existing retail space. For the next 20 years Gem City has projected an additional development of 30,000 SF of retails space and two factories employing 30 people per shift per day apiece. Gem City has a single 2-acre park within the city limits and a 10-acre cemetery outside the city limits.

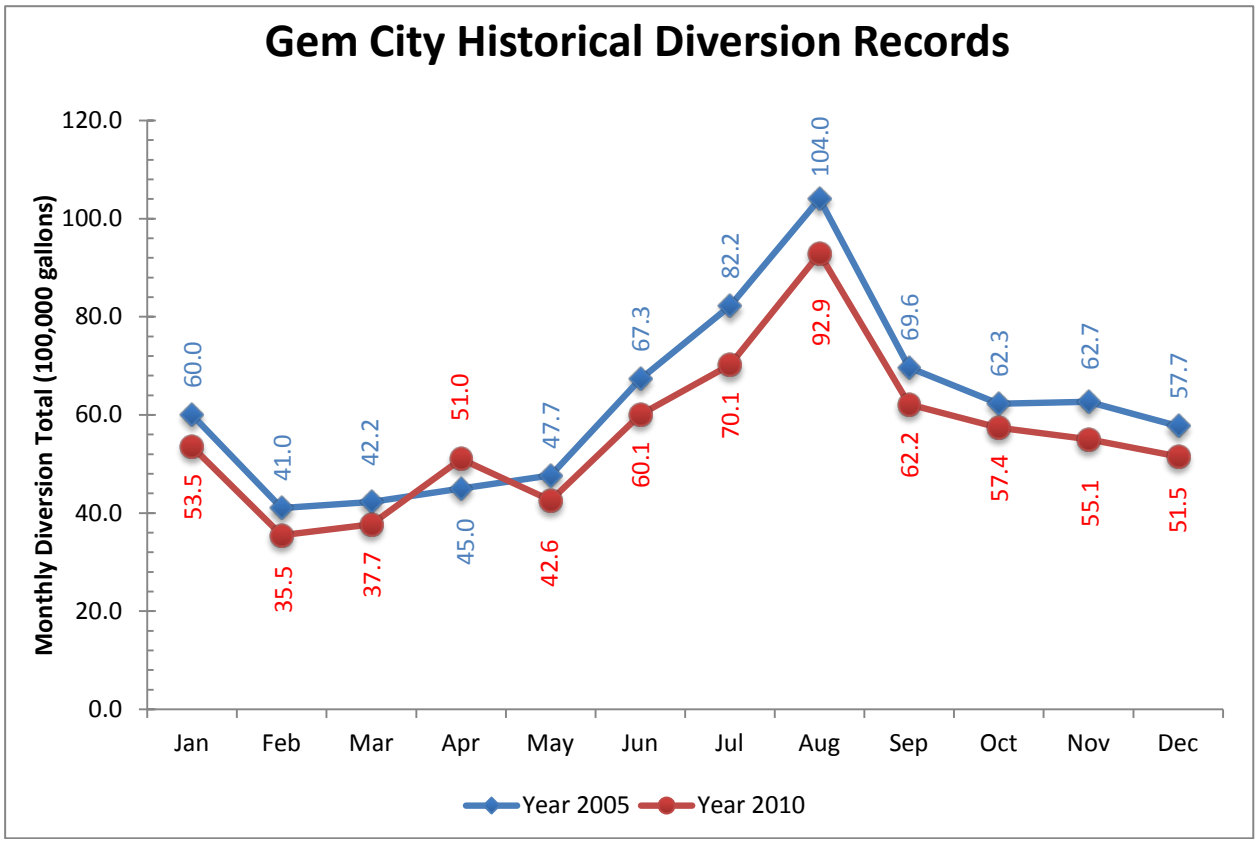
U.S. Census Bureau data for Gem City for the last four censuses conducted is summarized in the following table. The U.S. Census Bureau also reports average persons per household for Gem City at 3.14 in the year 2000 and 2.81 in the year 2010.

Gem City, ID

Year	Population*
1980	610
1990	804
2000	990
2010	1044

*US Census Data

Gem City's monthly municipal water system diversion volumes for years 2005 and 2010 are summarized in the following figure. Gem City does not have a separate irrigation utility and all residential irrigation is provided for by the municipal water system. Gem City does not have diversion data with a finer recording interval than monthly. They have no understanding of their MDD:ADD or PHD:ADD peaking factors, nor adequate data to support the analysis and derivation of these values.



The following table summarizes Gem City's existing water rights portfolio.

Gem City Water Right Portfolio

WR No.	Beneficial Use Desc.	Diversion Rate (cfs)	Annual Diversion Vol. (AF)
95-123	Municipal	0.20	N/A
95-1234	Municipal	0.20	N/A

Analysis – Service Area

Gem City's proposed RAFN service area can include all areas within the existing area of city impact (largest planning boundary that has been adopted by the City). It can include areas outside of the city's area of impact where water service is currently provided through interconnection. It cannot include proposed service areas outside the area of city impact where water service is not already provided. In addition, it cannot include the service area of other municipal water providers and it cannot include areas included in an overlapping comprehensive land use planning area as adopted by another municipality. For the sake of the example we will assume that appendix Item 2 illustrates the service area for the RAFN.

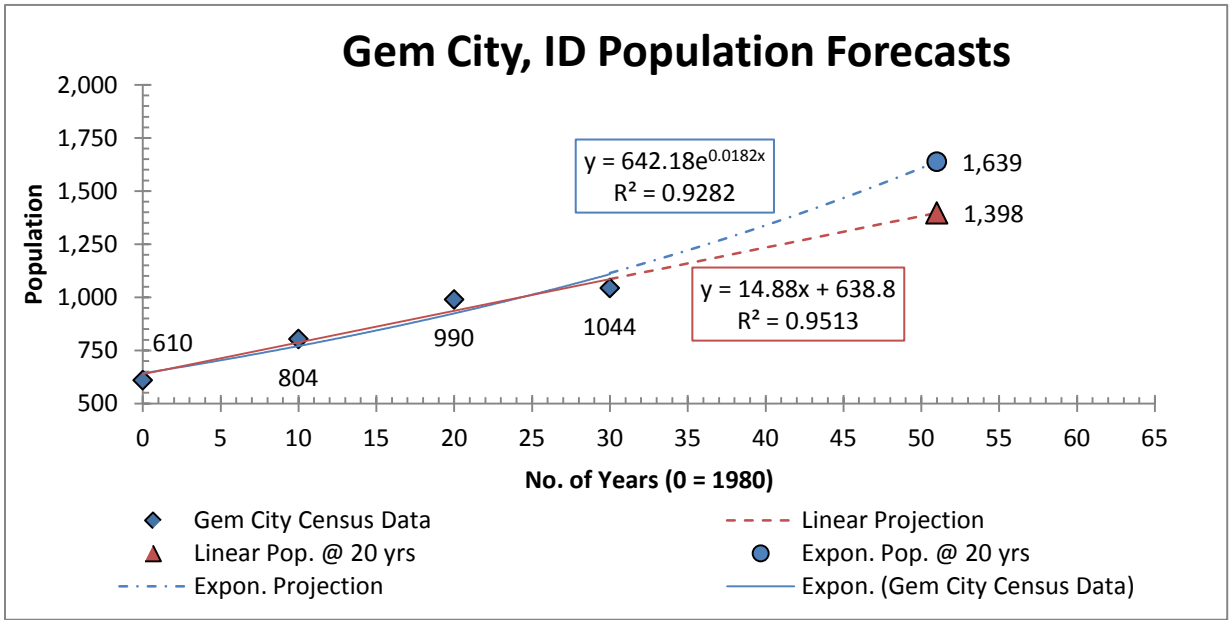
Analysis – Planning Horizon

Gem City has recently adopted a new comp plan with a 20 year planning horizon associated with the document. There are no other appurtenant planning documents such as a master water plan from which to reference an alternative planning horizon. Since a RAFN planning horizon cannot be inconsistent with comprehensive land use plans adopted by the City, the planning horizon is limited to 20 years. In addition, 20 years is consistent with the values presented in Tables 2 and 3 further confirming it as an appropriate value for

use with this RAFN proposal.

Analysis – Population Projections within the Planning Horizon

Gem City does not have any studies of population growth or demographics specific for their community. Therefore, U.S. Census Data represents the only available data regarding the population and demographics of Gem City. To avoid skewing population predictions to ephemeral trends within the census data, it is appropriate to look at a minimum of three decades worth of census data. The following figure is an x-y scatter plot of Gem City population data and years (blue diamonds). Exponential (blue line) and linear (red line) relationships have been molded to the census data and are depicted on the figure illustrating two different models between population and time.



Statistically speaking both models can be considered highly significant with coefficient of determination (R^2) values of 0.9513 for the linear model and 0.9282 for the exponential model. Presented independently either model could be considered reasonable. However, when the two models are presented together, allowing for comparison, the linear model establishes a better fit. As such, the linear relationship should be selected to forecast future populations. Since application for RAFN is being made in 2011 and the planning horizon has been established at 20 years, we are interested in forecasting the population for the year 2031 (or year 51 when 1980 = year 0). The following calculation establishes the future population at the end of the planning horizon.

P_{2031} = 14.88*(51) + 638.8 = 1,398 people

Analysis – Water Demand

Gem City has presented data for two different water service years, 2005 and 2010. Consistent with state wide and national trends, even though the service population of the town went up from 2005 to 2010, the demand went down, slightly. Since 2010 best captures existing demand characteristics, which are most likely to translate forward in time, it is appropriate to use data from 2010 to establish water demand.

Gem City has presented total diversion records and a breakdown of non-residential demand. They have not provided a breakdown of residential demand exclusive of non-residential demand nor have they presented

data on unaccounted for water (UAW). Without a breakdown of residential demand it is hard to make use of the non-residential demands. From the total diversion data it is possible to derive a per capita water use, but this value will incorporate or carry with it the non-residential demand component. Because of the lack of data exclusive to residential demand the applicant should not utilize the non-residential data in forecasting water demand.

The following table summarizes monthly water demand diversions for 2010. It also summarizes per capita monthly average daily demand, which was calculated by assuming a static population over the entire course of the year of 1,044 people.

Gem City 2010 Municipal Water Supply System Diversion Records

Month	No. Days	2010 Monthly Div. (gal)	Monthly ADD (GPD)	Monthly ADD per Capita (GPD)
Jan	31	5,354,690	172,732	165
Feb	28	3,547,730	126,705	121
Mar	31	3,771,120	121,649	117
Apr	30	5,102,560	166,752	160
May	31	4,259,420	137,401	132
Jun	30	6,009,070	200,302	192
Jul	31	7,014,390	226,271	217
Aug	31	9,285,620	299,536	**287**
Sep	30	6,216,640	207,221	198
Oct	31	5,737,530	185,082	177
Nov	30	5,507,040	183,568	176
Dec	31	5,151,590	166,180	159
Annual	365	66,957,400	--	**--**

From this data we can calculate the average daily demand (ADD) per capita by dividing the total diversions (66,957,400 gallons) by 365 days by 1,044 people. For 2010 ADD equals 176 gallons per day (GPD) per capita. We can also determine the maximum monthly average daily demand (MMAD) per capita by dividing monthly total diversions by the number of days in the month by 1,044 people and selecting the largest value. For 2010 we can see that the MMAD is equal to 287 GPD per capita and this value occurred in August, which is logical, as this is the month likely to necessitate the greatest irrigation demand on the system. Sufficient data does not exist to calculate maximum day demand (MDD) or peak hourly demand (PHD). Therefore, to determine these values, in consideration of the fact that historical data and analogous systems are insufficient to derive actual values for this example, we will rely upon the peaking factor values presented in Table 3. Utilizing values from Table 3 we can calculate MDD from MMAD by multiplying MMAD by 1.3, this calculation yields a MDD per capita value of 373 GPD. Alternatively we could calculate MDD from ADD by multiplying ADD by 2.0, this calculation yields a MDD per capita value of 352 GPD.

To calculate the total projected future water demand we must multiply the future population at the end of planning horizon (1,398 people) by the selected per capita demand value. Since Gem City relies on storage to meet peak hourly demand, the maximum day demand represents the design demand value for forecasting future water demand. Since estimations of MDD from ADD and MMAD are both valid approaches it is appropriate to use the larger of the two values. With these considerations in mind the projected future MDD water demand is equal to 362 gallons per minute (GPM) or 0.81 cubic feet per second (CFS). Gem City does not have any data on UAW. In this event we can use a maximum UAW value of 10% of total diversions.

Therefore, after accounting for UAW the projected future MDD water demand can be adjusted to 0.91 CFS (0.83 + 0.10*0.83).

Review of Gem City's existing water right portfolio indicates that the city already has 0.40 cfs of diversion rate. This value must be subtracted from the projected future MDD water demand to determine the diversion rate value that will be included on the new RAFN water right, in this instance the final RAFN diversion rate value will be 0.51 CFS (0.91 – 0.40).

Gem City's proposed RAFN service area will include a municipal water right for 0.20 cfs currently owned by a homeowner's association within the proposed service area. The disposition of this water right should be addressed in the RAFN application.

ADMINSTRATOR'S MEMORANDUM

To: Regional Offices
Water Allocation Bureau

Application Processing No. 76
Licensing No. 15
Transfer Processing No. 30
Water Supply Bank Processing No. 3

From: Jeff Peppersack

RE: **SEEPAGE LOSS STANDARDS FOR PONDS AND RESERVOIRS**

Date: March 5, 2015

BACKGROUND

Idaho Code § 42-203A(5)(f) requires the Department to ensure that proposed water uses are not contrary to conservation of water resources when reviewing new water right applications. Idaho Code § 42-222(1) provides a similar requirement for transfer applications. For many water uses, the Idaho legislature or the Department has established standards intended to promote the efficient use of water. For example, irrigation use is limited to 0.02 cfs per acre unless the applicant can show a compelling need for additional water.

The need to address seepage loss has developed as the Department has seen an increase in water right applications and transfers which propose to store water in small impoundments for purposes, such as aesthetics, that require a full reservoir. The ability to keep a reservoir full requires an appropriation of water not just for a one-time early season fill, but also for the replacement of evaporation and seepage losses throughout the year.

On occasion, applicants or permit holders may have a geotechnical or site engineering report describing seepage loss expectations or test results. In such a case, the reviewer should reference and utilize the measured soil properties presented in the report. Oftentimes, no such report is available to the reviewer. This memorandum establishes guidelines for reviewing seepage losses from ponds and reservoirs to ensure that water rights for storage promote efficiency by meeting a reasonable conservation standard. Without a storage efficiency standard, the diversion of water to replace storage losses could reduce the availability of water for other appropriators.[1]

[1] This guidance does not apply to applications seeking one fill annually with no refill provisions.

SEEPAGE LOSS STANDARDS

The Alabama Agricultural Experiment Station Bulletin 599[2] provided the following mean seepage rates for ponds based on the following Unified Soil Classification System groups:

SM (silty sand, sand silt mixtures) = **0.2 ft per day**
SC (clayey sands, sand clay mixtures) = **0.007 ft per day**
ML (inorganic silts – very fine sands, silty, or clayey fine sands) = **0.02 ft per day**
CL (low to medium plasticity clays) = **0.003 ft per day**
CH (high plasticity clays) = **0.0003 ft per day.**

These published seepage rates provide reasonable seepage loss expectations for appropriately designed small ponds and reservoirs. In addition, soil type OL is very similar to ML; use 0.02 ft per day with this soil type. Soil types MH, OH, and PT are very similar to CH; use 0.0003 for these soils.

The maximum allowable seepage rate is 0.2 ft per day. In general, the Department should not authorize the appropriation of water to replace seepage losses in excess of these rates, except as described in this memorandum.

The following soil types are all sandy and/or gravelly soils that would likely exceed 0.2 ft per day.

GW (well-graded gravels and gravel-sand mixtures)
GP (poorly graded gravels and sandy gravel mixtures with little or no fines)
GM (silty gravel and poorly graded gravel/sand-silt mixtures)
GC (clayey gravels and poorly graded gravel-sand-clay mixtures)
SW (well-graded sands and gravelly sands with little or no fines)
SP (poorly graded sands and gravelly sands with little or no fines)

Ponds developed in these soils should be equipped with a liner or other construction modifications to reduce seepage.[3]

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[2] Stone, Nathan M., and Claude E. Boyd. Alabama Agricultural Experiment Station Bulletin 599. Auburn University, Alabama. *Seepage from Fishponds*. 1989.

[3] There are many ways to reduce seepage losses. The United States Department of Agriculture through the Natural Resources Conservation Service ("NRCS") Agriculture Handbook Number 590, *Pond – Planning, Design, Construction* recommends that pond sites should have at least 20 percent clay soils (page 63). If a pond site doesn't have at least 20 percent clay, the NRCS recommends a variety of methods to seal the pond using chemical additives, bentonite, water proof liners, or compaction (pages 62-65).

EXCEPTIONS

There are some circumstances where it is not reasonable to apply the seepage rate standards described above. The following are some situations where the seepage rates listed above may be exceeded without further review:

- Storage facilities being used as infiltration basins for ground water recharge purposes should not be expected to comply with the seepage rate standards listed above. The purpose of recharge is to cause water to seep into the ground, not to maintain a full reservoir for aesthetics or similar purposes. Such uses are mutually exclusive. Water users should not be allowed to exceed the seepage rate standards by referring to ponds for other uses as recharge ponds.
- Excavated ponds filled by intercepting ground water should not be expected to comply with the seepage rate standards listed above. Under normal conditions water seeps *into* these ponds, not out of these ponds.
- Idaho Code §42-202 provides for a maximum of 5 acre-feet of stored water per acre of land irrigated. It is not necessary to apply seepage rate standards to reservoirs used to store water for irrigation purposes. Irrigation storage amounts in excess of 5 acre feet per irrigated acre require justification for the total amounts.

NEW APPLICATONS FOR PERMIT, TRANSFERS, AND WATER SUPPLY BANK RENTALS

The seepage rate standards described in this memorandum should be applied to new appropriations, transfers of water to new ponds or reservoirs, and Water Supply Bank rentals resulting in new ponds or reservoirs. Applications exceeding the standards need to justify the additional seepage amounts by demonstrating that they are consistent with the conservation of water resources or that the exception is necessary to accomplish the proposed beneficial use. If the additional seepage amounts are not justified, the approvals should be based on the standards set forth in this memo.

LICENSING OF EXISTING PERMITS

The seepage rate expectations discussed in this administrative memorandum will be applied when licensing water rights that have already been permitted as of the date of this memorandum. In general, replacement of seepage losses exceeding the standards set forth in this memorandum will not be considered to constitute a beneficial use of water. Therefore, seepage losses factored into the storage volume for water right licenses should not exceed the seepage loss standards listed above unless they meet one of the exceptions listed above, even if the permit pre-dates the issuance of this memorandum. Department staff members authorized to sign water right licenses may evaluate established storage facilities that exceed the seepage rate standards described in this memorandum on a case by case basis to determine if replacement of the additional seepage losses constitutes a beneficial use of water. Such determinations should be documented in the water right file.

SEEPAGE LOSS EVALUATION SPREADSHEET

The Department has developed a spreadsheet for estimating reservoir fill capacity, evaporation losses, and seepage losses. Department staff members are encouraged to share the spreadsheet with prospective applicants, consultants, and certified water right examiners for preparing and evaluating applications, as well as for conducting beneficial use field examinations. Applicants may utilize the NRCS Web Soil Survey, NRCS Published Soil Surveys, or the GIS layer 'PondSoils' found on the Department's website. Other technically sound methods for evaluating seepage losses may also be employed or accepted in IDWR's water right processes; however, alternate methods must consider conservation of water when determining acceptable seepage rates.

Pond Loss Calculation Spreadsheet

March 2015

Note: This macro-enabled workbook was created using Microsoft Excel 2007. The use of macros is optional. To enable macro functionality, access the macro security settings: (1) click the Microsoft Office button, (2) click Excel Options, (3) click Trust Center, (4) click Trust Center Settings, and then (5) click Macro Settings and select the option desired.

Idaho Department of Water Resources designed this spreadsheet in support of the guidance memo *Seepage Loss Standards for Ponds and Reservoirs*. It can be used to estimate the total volume required for a storage use. IDAPA Rule 37.03.08.035.03.b.v requires Department staff to account for all refills of a storage facility. This need has become especially acute with the increased popularity of ponds and reservoirs for aesthetic, recreation, and wildlife (ARW) purposes. Unlike irrigation reservoirs, ponds and reservoirs for ARW purposes are typically kept full all year. This spreadsheet was designed to account for the initial fill volume, refills to replace "from storage" uses, and the volume needed to replace evaporation losses and seepage losses to provide a more accurate accounting of the total water needed for a storage facility.

Tab #1 - Soil Classification with the NRCS Web Soil Survey:

Web Soil Survey (WSS) provides soil data and information produced by the National Cooperative Soil Survey. It is operated by the USDA Natural Resources Conservation Service (NRCS) and provides access to the largest natural resource information system in the world. NRCS has soil maps and data available online for more than 95 percent of the nation's counties.

This sheet will give the user instruction on how to efficiently access the soil classification information for their pond location under examination.

Tab #2 - Seepage Loss:

The Seepage Loss sheet guides the reviewer through necessary calculations to determine seepage loss of a pond. The reviewer will need to choose the suggested soil value for the soil that most represents the soil at the location and depth of the pond. The reviewer also must have the surface area of the pond in square feet. The sheet has a calculator to convert the surface area from acres to square feet if you determine the surface area from Arc Map.

For additional background, review pond seepage loss information on page 16 of the "Seepage from Fish Ponds" Bulletin 599, August 1989, Alabama Agricultural Experiment Station, Auburn University, Alabama, Lowell T Frobish Director, written by Nathan M. Stone and Claude E. Boyd. This document can be found in the *Field Examiner's Handbook on our WENET page under Water Right Permits Section - Field Examiner's Handbook - Peer Reviewed section - Library - Elements of water rights - Water use - Storage.*

Tab #3 - Evaporation Loss:

This sheet calculates the evaporation losses based on the University of Idaho Evapotranspiration web page. For Department staff, there are links in the spreadsheet to this web page and you can find the most representative station in Arc map using the ETIdahostations shape in X:/Spatial/Climate/ETIdahostations.shp.

Please Note: For an alternate method to calculate acres required to be retired in a water right transfer from irrigation to storage to cover the evaporative losses, please see Transfer Processing Memo # 26.

Tab #4 - Total Storage:

This sheet automatically takes the seepage volume amount calculated in the Seepage Loss Sheet and the evaporation volume calculated in the Evaporation Loss sheet and combines with the pond capacity to determine total storage volume required for this pond.

Tab #5 - Pond Capacity:

This sheet contains mathematical equations which are helpful in determining the volume of a given pond. Four pond shapes are presented for user reference. If the pond found at the field exam does not conform to any of the example shapes presented, the examiner should utilize other mathmatical equations to determine pond capacity.

This sheet also calculates the minimum flow required to maintain the pond level, and the number of days to fill the pond. The number of days to fill the pond incorporates the seepage and evaporation losses.

Enter Data — All Data that you enter into this sheet will be in yellow boxes with blue text.

Calc'd Data — All calculated data will be in green boxes with red text.

Explanation — All blue boxes will provide explanations, tips and other helpful information.

Tab #6 - Notes and Tips:

This tab supplies useful information and explanations on the spreadsheet. It is recommended that you read this tab prior to filling out the spreadsheet. This tab also contains a diagram showing the items that must be factored into a water balance for a storage water right.

Tab #1.1 - Soil Classification with ArcMap:
(Alternative to Soil Classification with the NRCS Web Soil Survey)
The Soil Classification (GIS) sheet is designed for users with access to ESRI ArcMap and corresponding Geographic Information System software. For reviewers that are already familiar with the functionality of GIS, this sheet explains how to interpret the SSURGO and STATSGO soils layers in order to determine the soil classification at the pond site.

Tab #1.2 - Soil Classification with Published Soil Surveys:
(Alternative to Soil Classification with the NRCS Web Soil Survey)
The Soil Classification (PDF) sheet includes instructions on how to utilize NRCS Published Soil Surveys to obtain subsurface soils data for excavated ponds. Most Idaho Published Soil Surveys are designated by the name of the county. Others are published under multiple county names or by a significant natural feature in the area (ie. Caribou National Forest, City of Rocks National Reserve, Middle Fork Payette River Area, Duck Valley Indian Reservation, etc.). The GIS Layer was taken from the Soil Survey Geographic Data Base compiled by the Natural Resources Conservation Service (NRCS). The reviewer may have to utilize supplemental maps to determine the applicable Soil Survey report for the pond location. This sheet methodically guides the reviewer through the process of how to determine the USCS Soil Classification for use on the sheet entitled "Seepage Loss."

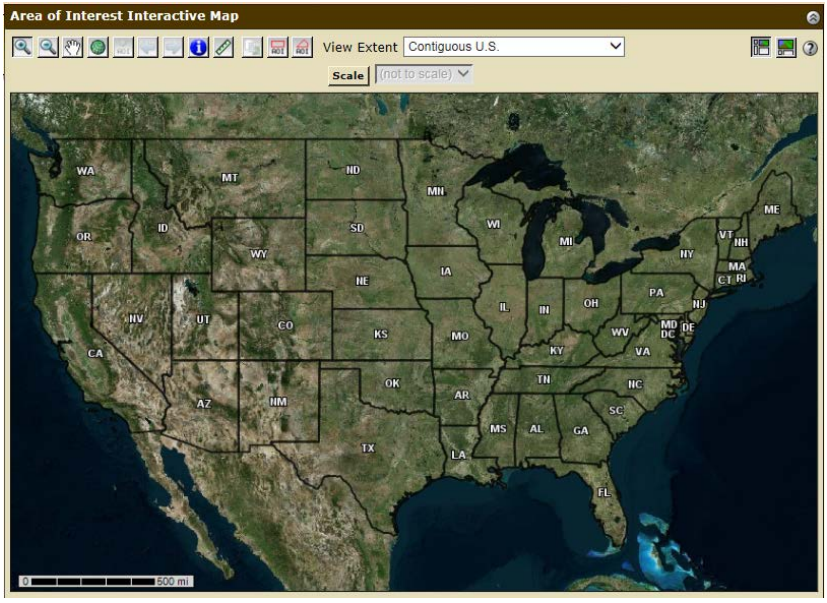
Soil Classification with the NRCS Web Soil Survey

This spreadsheet has been designed by Idaho Department of Water Resources to determine the soil type and classification at the pond site.

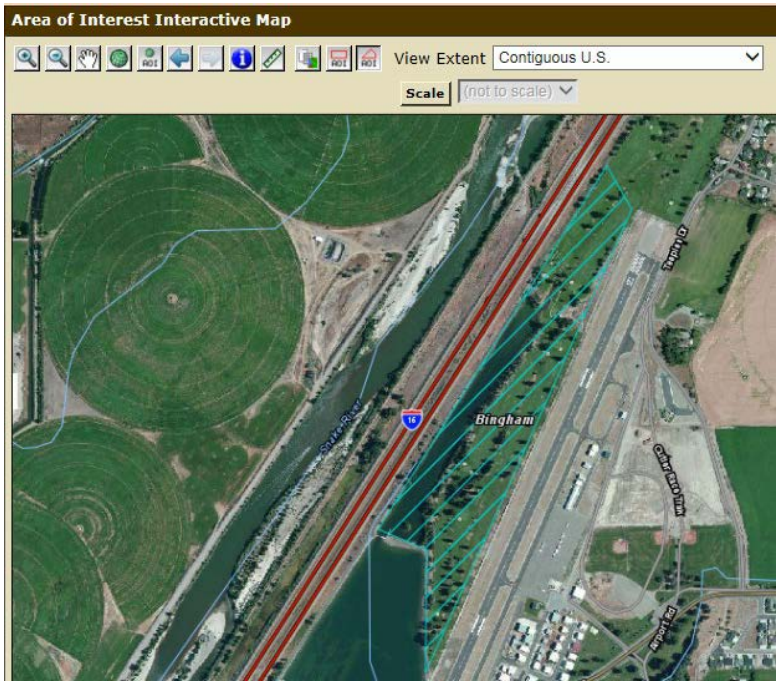
Use the link to access the NRCS Web Soil Survey:
http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

Alternative methods of obtaining soil classification information may be found in the last two tabs of this worksheet.

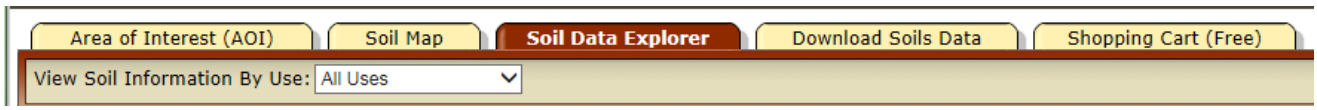
1. Use the { } tool to zoom in to the location of the pond.



2. Under the "Area of Interest" tab, create an Area of Interest (AOI), where you would like information about the soil. Use the following tools to create your area of interest: { } and { }

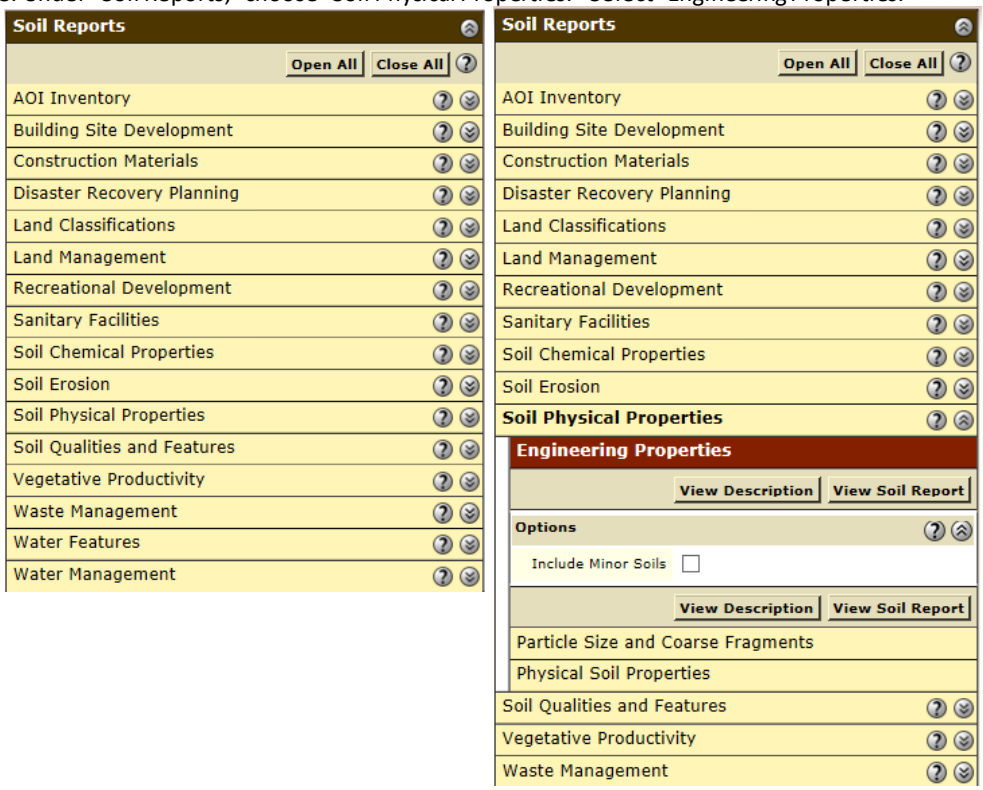


3. Click the "Soil Data Explorer" Tab.

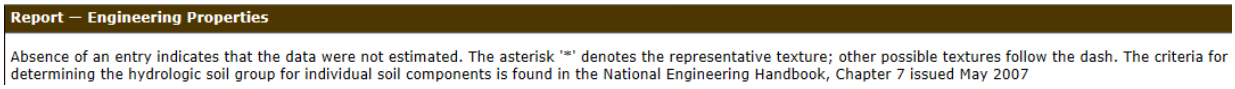


4. Click the "Soil Reports" Tab.

5. Under "Soil Reports," choose "Soil Physical Properties." Select "Engineering Properties."



6. Click the "View Soil Report" button and wait for the WSS to load.



7. View the soil information chart below the map.

Bingham Area, Idaho

Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*Pct*	*Pct*					*Pct*	
HsA—Heiseton sandy loam, 0 to 2 percent slopes														
Heiseton	80	A	0-8	Sandy loam	SC, SC-SM	A-2, A-4	0	0	90-100	90-100	60-85	30-50	20-28	4-10
			8-38	Fine sandy loam	SC-SM, SC	A-4	0	0	90-100	90-100	65-85	40-50	20-28	6-10
			38-45	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	70-85	20-33	6-13
			45-65	Very gravelly sand, very gravelly coarse sand, extremely gravelly coarse sand	GP, GP-GM, GW	A-1	0	0	20-50	10-30	5-10	0-5	0-19	NP-2
Rv—Riverwash														
Riverwash	100		0-60	Stratified sand to gravel	—	—	—	—	—	—	—	—	—	—
Wb—Wardboro soils														
Wardboro	80	A	0-2	Sandy loam	SC-SM, SC	A-2, A-4	0	0	100	100	74-79	36-41	21-28	6-10
			2-11	Sandy loam	SC, SC-SM	A-2, A-4	0	0	100	100	74-79	36-41	21-28	6-10
			11-60	Extremely gravelly coarse sand	GC-GM, GP, GM	A-1	0-15	10-45	15-30	10-25	0-25	0-25	0-22	NP-4

8. Look for the soil type with the greatest "Pct. of map unit" or for the soil which is most representative of the pond location. Choose the depth which most closely corresponds with the depth of the pond under examination. After this, move right across the table to find the Unified Soil Classification System (USCS).

If you find that this depth arrives at more than one classification, choose the classification which is most advantageous to the applicant (highest seepage rate). You may need to toggle between the "Soil Class" and "Seepage" sheets in order to view the table entitled "Suggested Seepage Rates for Different Soil Types."

9. Use this soil classification to find the Total Seepage Loss on the next sheet "Seepage Loss."

Seepage Loss Calculations

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total annual seepage losses from a pond.

FILE NUMBER	xx-xxxxx
REVIEWER	Joe Agent
DATE	1/1/00

User Input
Calculated value
Formula Explanations

Print Page to PDF

INPUTS

Pond Surface Area (AC.)	5	AC.
Pond Surface Area (SQ. FT.)	217800	SQ. FT.
I used the following method to obtain my Soil Classification information:	NRCS Web Soil Survey	
My Soil Classification is	GP	
Suggested Seepage Rate (FT./DAY)	0.2000	FT./DAY

Formula: (Surface Area X Seepage Rate) X 7.48 = Gallons Per Day Loss

Convert to GPD	325829	GPD
Total Seepage Loss (AFA)	365.0	AFA

Though sand and gravel seepage rates may actually be higher, the maximum allowable rate is 0.2 ft/day, pursuant to Administrative Memo "Seepage Loss Standards for Ponds and Reservoirs."

Suggested Seepage Rates for Different Soil Types:
GW, GP, GM, GC, SW, SP and SM (silty sand, sand silt mixtures and gravel mixtures) **= 0.2 ft per day**
OL and ML (inorganic silts - very fine sands, silty, or clayey fine sands) **= 0.02 ft per day**
SC (clayey sands, sand clay mixtures) **= 0.007 ft per day**
CL (Low to medium plasticity clays) **= 0.003 ft per day**
MH, OH, PT and CH (high plasticity clays) **= 0.0003 ft per day**
LINED PONDS (liners can be chemical, fabric, or bentonite) **= 0 ft per day**
Ponds Intercepting Groundwater (excavated ponds filled by ground water) **= 0 ft per day**

PLEASE NOTE: The initial basis for the Suggested Seepage Rates in the table above is found on Page 16 of Seepage from Fish Ponds, Bulletin 599, August 1989 Alabama Agricultural experiment Station, Auburn University, Auburn University Alabama. If you don't know the soil type, please refer to the map provided at the NRCS Web Soil Survey (Tab #1) , an ArcMap Soil Classification Map (Tab #1.1), or published NRCS Soil Survey (Tab #1.2) . Use "0" if the pond fill relies on the water table.

Evaporation Loss Calculations

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the annual evaporation losses from a pond.

FILE NUMBE	xx-xxxxx
REVIEWER	Joe Agent
DATE	1/1/00

User Input
Calculated value
Formula Explanations

The acronyms used on the Kimberly Research Center website are defined below:

- P = Precipitation
- ET= Evapotranspiration
- P_d = Precipitation deficit
- P_d =ET-P

USING THIS SPREADSHEET

Use the link below to access the Kimberly Research Center website. This website provides the Precipitation Deficit for a station most representative of the pond under examination. The Precipitation Deficit is the total amount of free water surface evaporation minus the precipitation for a given area, which gives the total amount of evaporative losses incurred by the pond. There are several weather sites that are used throughout the state. IDWR staff can find the nearest site using Arc Map. The shape file containing the sites can be found at X:/Spatial/Climate/ETIdahostations.shp.

Instructions:

1. Use the link below to navigate to ET Idaho 2012.
2. Select the station which is most representative to your pond location.
3. Click Submit Query.
4. Under "Land Covers with Evapotranspiration Estimates," select "Open Water - Shallow Systems (ponds, streams)" or "Open Water - small stock ponds" depending on the pond size.
5. Click the link to "Precipitation Deficit."
6. Reference and copy (ctrl + C) the first subheading "Mean" values.
7. Click the "Paste Values from ET Idaho" button. The table will automatically enter a zero (0) for any negative precipitation deficit values.

Paste Values from ET Idaho

Print Page to PDF

Found at: http://data.kimberly.uidaho.edu/ETIdaho/

Precipitation Deficit

Station: Twin Falls 2 NNE (NWS -- 109294)

Month	mm/day[1]	*Days per month*	mm/Month
Jan	-1.34	31	0.00
Feb	-0.72	28	0.00
March	-0.29	31	0.00
April	1.09	30	32.70
May	1.77	31	54.87
June	3.33	30	99.90
July	4.41	31	136.71
August	3.81	31	118.11
September	2.28	30	68.40
October	0.89	31	27.59
November	-1.27	30	0.00
December	-1.76	31	0.00
Total mm/year =			538.28

PLEASE NOTE: The seasonal average for precipitation deficit should not be used for calculations because precipitation often exceeds evaporation during wetter months of the year. If the pond is kept full, excess precipitation during wetter months does not serve to refill the pond during drier months.

For example, see Sandpoint KSPT (NWS -- 108137), the annual precipitation deficit is -106 mm. However, April through September have positive precipitation deficit values. To properly estimate the annual volume of water necessary to refill a pond due to evaporation losses, the table will automatically enter a zero (0) for each month that the precipitation value is reported as a negative value.

As described above, precipitation offsets evaporation in winter months, so the net effect is that wintertime precipitation deficit is usually zero.

[(mm/yr) ÷ (convert to feet)] X (Surface area of pond, in acres) = Evaporation Loss in Acre Feet

(538.28 ÷ 304.8) X 5.00 = 8.8 AFA

Surface Area of Pond is automatically carried over from the Seepage Loss Sheet.

Example Data:

ET_{Idaho} 2012 -- Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho

Please send suggestions for improving this site to robison at kimberly dot uidaho dot edu

Data enter negative values above as "0"

Twin Falls 2 NNE (NWS -- 109294)

Statistics based on thirty year normal spans 1943 to 1973 years

For a different land cover or crop click on the above link.
ghlight this table and copy via the clipboard to a Mircosoft Excel or OpenOffice spreadsheet to plot or otherwise work with this data.

Open water - shallow systems (ponds, streams)
Precipitation Deficit (Click here for a graph)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Growing Season[a]	Non Growing Season[b]	Annual
Mean[j]	mm/day												mm		
Monthly[c]	-0.37	0.32	1.19	2.40	3.13	3.73	4.94	4.24	3.11	2.00	0.22	-0.33	751	0	751
15-Day Moving Average[d]	-0.50	0.31	1.19	2.42	3.09	3.74	4.97	4.23	3.08	2.02	0.12	-0.35			
7-Day Moving Average[e]	-0.41	0.32	1.19	2.40	3.10	3.72	4.96	4.25	3.12	2.02	0.16	-0.38			
3-Day Moving Average[f]	-0.37	0.33	1.20	2.41	3.12	3.73	4.94	4.24	3.12	2.01	0.20	-0.35			

The above table is a snap shot of the tables you find at the Kimberly Research Center Webpage. (Use link above.) Copy (ctrl + C) the numbers found in this table.

Total Storage Calculations

FILE NUMBER	xx-xxxxx
REVIEWER	Joe Agent
DATE	1/1/00

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total seepage, evaporation and fill capacity required for a pond.

User Input
Calculated value
Formula Explanations

Print Page to PDF

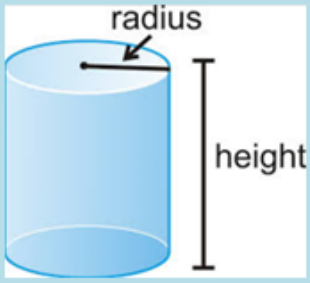
Surface Area (AC.)	5	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	6.8	"Average Pond Depth" depicts the actual depth of the pond either measured or estimated. Note: If you know the maximum depth and not the average depth, the Field Examiner's Handbook suggests multiplying the maximum depth by 0.4 to get the average depth, or you can use any method that seems reasonable to attain average depth.
Pond Capacity (AF)	34	Pond Capacity is calculated by multiplying the Pond Surface Area by the Average Pond Depth. If you know the capacity, divide the capacity by surface area and enter the average pond depth in the space above. Note: If pond capacity is determined using a method shown on the "Pond Capacity" sheet, the user may need to modify the value of "Pond Capacity" (cell B9) manually. Note that if the value is modified manually, the formula will be altered for future use.
Multiple Fill Volume Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (AF)	5	The "Multiple Fill Volume Above Initial Fill" is the acre-feet of water required to meet a *from storage* component if the *from storage* component exceeds a one time fill. This section should not include the amount of water needed to fill the pond initially or the amount of water needed to maintain the pond level due to evaporation or seepage. For example: if a pond has a capacity of 5 acre feet and 2.5 acre feet of seepage and evaporation, but the pond is used for irrigation that requires 10 acre feet of from storage for the irrigation use, then you would insert 5 acre feet into this location (10 acre feet needed - 5 acre feet from the initial fill = 5 acre feet of additional storage needed). Note: You must have a "From Storage" component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	365.0	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	8.8	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	412.8	The "Total Volume Required" is calculated by adding the Pond Capacity, Multiple Fills, Seepage Loss, and Evaporation Loss amounts to determine the total amount of storage required.

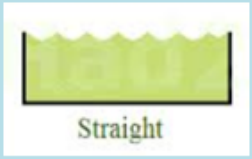
Flow Rate into Pond (CFS)	**1.00**	The "Flow Rate into Pond" depicts the actual flow, either measured or estimated, into the pond. For offstream facilities, this will be equivalent to "diversion to storage" rate.
Highest Daily Evaporation Rate From Evaporation Tab. (mm/Day)	**4.41**	This number is carried over from the "Evaporation Loss" sheet. It is the highest recorded number in the "Precipitation Deficit Table".
Required Daily Maintenance Volume (AF/Day)	**1.07**	"Required Daily Maintenance Volume" is the maximum volume of water needed on any given day during the year to maintain pond volume. It is calculated by adding the highest daily evaporation loss to the average daily seepage loss in acre feet. The average daily seepage loss is calculated by dividing the "Estimated Seepage Loss" by 365 days. This is acceptable, since the seepage rate shouldn't vary throughout the season unless the pond completely freezes over during the winter months. The highest daily evaporation loss is calculated by dividing the Highest Daily Evaporation Rate by the 304.8 conversion factor and multiplying this number by the pond surface area to attain a combined daily acre feet requirement.
Minimum Maintenance Flow (CFS)	**0.54**	The "Minimum Maintenance Flow" is the minimum amount of flow required to maintain the level of the pond. This number is determined by dividing the "Maximum Required Daily Maintenance Volume" by 1.9835. This flow can be used to determine if the flow rate into the pond is adequate to maintain the pond level.
Days Required to Fill the Pond	**37**	The "Days Required to Fill the Pond" is calculated by dividing the "Pond Capacity" by the "Flow Rate" minus "Minimum Maintenance Flow" multiplied by 1.9835. This section will assist you in determining if the flow rate being diverted to the pond is adequate to fill the pond while maintaining the pond level. The length of time to fill the pond will help determine if the flow rate is adequate for the size of pond being proposed. If this number is *approximately* 6 months (180 days) or more, the reviewer should have a discussion with the applicant to make sure he/she understands that it will take a significant length of time to fill the pond.
Days Required to Fill the Pond at 13,000 Gallons per Day	**-33**	Some water users may want to fill a pond under the 13,000 gallons per day domestic exemption. The "Days Required to Fill the Pond at 13,000 Gallons per Day" is calculated by converting the "Pond Capacity" and the "Required Daily Maintenance Volume" to gallons. The "Pond Capacity" is then divided by 13,000 gallons minus the "Required Daily Maintenance Volume" in gallons to determine the number of days to fill pond. If this number is *approximately* 6 months (180 days) or more, the reviewer should have a discussion with the applicant to make sure he/she understands that it will take a significant length of time to fill the pond. Negative values indicate that the supply of 13,000 gallons per day is not enough volume to overcome the required daily maintenance volume; the pond will never fill.

Pond Capacity Determination

Cylinder Shaped

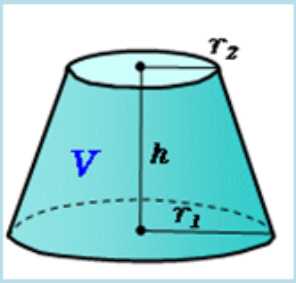
Volume = $\pi \cdot (\text{radius})^2 \cdot \text{height}$
OR
Volume = circular surface area · depth

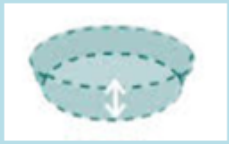




Truncated Cone Shaped

Volume = $(1/3) \cdot \pi \cdot (r_1^2 + r_1 \cdot r_2 + r_2^2) \cdot h$
where h = water depth
r_1 = radius at top of basin
r_2 = radius at bottom of basin



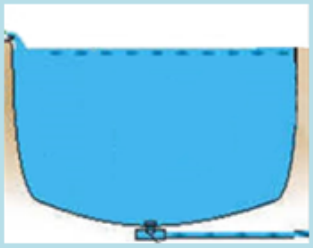


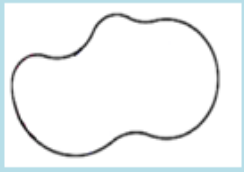
Freeform Polygon with Sloped Sides and Bottom

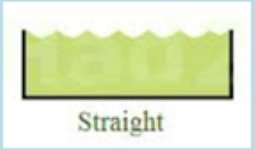
Volume = surface area · (2/5) · maximum depth

Freeform Polygon with Vertical Sides and Flat Bottom

Volume = surface area · maximum depth







The surface area of a freeform polygons should be measured using aerial photography and ArcGIS.

For ponds with an unusual shape and inconsistent depth, the reviewer may be able to combine different shapes to calculate a total pond volume.

Helpful Tips for Determining Pond Volumes

Types of Ponds and Reservoirs

The following is an excerpt from the report that is the basis for the University of Idaho Evapotranspiration Web Page. In this report, evaporation from three classes of open water was estimated:

small, shallow stock ponds: K_c* = 0.7 was used for all months

large, shallow water bodies or deep water bodies that have high turbidity: K_c* = 0.6 for all months. This class may be generally applicable to *relatively shallow* (< 4 m or 13.1 feet in depth) *ponds, reservoirs and streams*

deep systems (relatively clear lakes and reservoirs deeper than 4 m or 13.1 feet): use aerodynamic evaporation algorithms developed for American Falls Reservoir (Allen and Tasumi, 2005). Appendix 10# provides details on the procedure development and application. The evaporation estimations assume that no freezing occurs. If water systems are known to freeze, then the evaporation rate will tend toward zero during the periods of ice cover.

*The crop coefficient (K_c) is defined as the ratio of actual or potential evapotransporation by a specific crop or land cover condition to the reference evapotranspiration value.

#Allen, R., & Robison, C. (2006). Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho. *University of Idaho: University of Idaho Research and Extension Center at Kimberly, ID.*

Components of Storage

To get water to a pond that is not on the stream, you will need a water right component called **"Diversion to Storage."** **"Diversion to Storage"** components only have a rate of diversion. The volume components for this use are described in the **"Storage Component."**

The **"Storage Component"** of a water right allows a one-time fill (also known as **Pond Capacity**) plus the **"Evaporation Losses"** plus the **"Seepage Losses."** The **"Storage Component"** only describes a volume. Any diversion rate is considered under the **"Diversion to Storage"** component. **"Evaporation Losses"** and **"Seepage Losses"** are also described as the amount of water it takes to keep the pond full.

"Seepage Loss" is one of the most overlooked volumes in the **"Storage Component."** It can also be the largest contributor to the **"Storage Component."** When you initially fill a pond that sits above the water table, the pond will lose water. When the soil becomes saturated with water, the **"Seepage Rate"** drops to a steady state. The **"Seepage Rates"** used in this spreadsheet are determined using the saturated soil.

"Evaporation Loss" is simply the amount of water that evaporates from the surface area of the pond, minus the precipitation to the extent it offsets evaporation. We use the evaporation rates described in the University of Idaho Evapotranspiration Web Page. The evaporation web page accounts for variability in evaporation rates throughout the year. The reason that we use a "0" on all negative monthly values from the web page is to show that precipitation exceeded evaporation during that time period, and credit is not given for additional precipitation.

Components of a Storage Water Right

Water rights can also have a **"From Storage"** component. Generally, the **"From Storage"** component is limited to the capacity of the pond. However, there are times that the pond is filled and emptied, refilled and emptied several times if the permit allows. When a pond is filled and emptied several times, this is known as **"Multiple Fills."** This spreadsheet has a space to account for the **"Multiple Fills."** To figure out the additional volume for a **"Multiple Fill"** situation, you simply take the total amount of water needed to supply the **"From Storage"** component and subtract the **"Pond Capacity"** to determine the additional water needed to fulfill the **"Multiple Fill"** requirement. This methodology would leave the water user with a depleted pond at the end of his yearly usage. If the the owner wants to leave the pond full year round, the **"From Storage"** volume should be considered an addition to the **"Pond Capacity."** If this is the case, this needs to be well documented in the file.

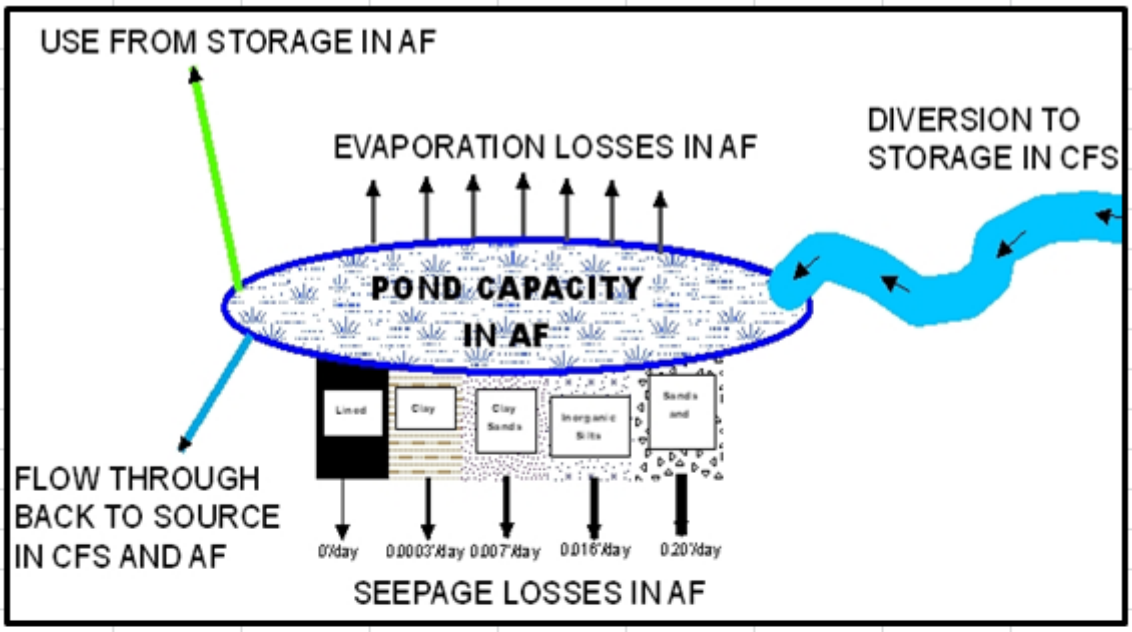
Calculating the **"Total Volume Required"** for storage is done by simply adding the **"Pond Capacity"** plus the **"Seepage Losses"** plus the **"Evaporation Losses"** and any **"Multiple Fills."** It is important to ensure the total volume needed for the uses described in the water right are included. This avoids having to file a second water right application to cover the amount of water not covered by the original water right, which will take additional time and increase the cost of attaining a water right to cover all of the water users needs.

"Time to Fill a Pond" Functions

This spreadsheet has a couple of functions that allow the user to determine if the pond design has a chance of being successful. Please see below for a description of these functions.

"Minimum Maintenance Flow" allows the water user to see the minimum diversion rate that would be required to maintain the pond level in order to overcome seepage and evaporation losses. This is an important tool for agents reviewing the water right application to ensure that the proposal is reasonable. If the diversion rate that the applicant proposes can't maintain the pond, then the applicant should be contacted to discuss the design and intent of the application. This may avoid the need to file and process additional applications.

"Days Required To Fill The Pond" is another tool used to see if a proposed application for permit is reasonable. If it takes too long to fill the pond, the water user will either need to increase the rate of diversion to the pond, reduce the size of the pond, or find an alternate supply to fill the pond.



The Flow Through Component

Another component of a water right would be the **"Flow Through Component."** This component is the amount of water diverted into the pond that is not used for seepage, evaporation or from storage uses, and flows out of the pond back into the source it was diverted from. This use is generally used to keep the pond fresh and free from moss and from going stagnant. This component has a diversion rate and volume. The diversion rate is the amount of water flowing out of the pond, and the volume is calculated by determining the volume of water diverted out of the pond. This is obtained by multiplying the diversion rate by the number of days or hours the water flows through the pond.

If there is a **"Flow Though"** component, then you will need to add this to the Total Volume Required to achieve the total volume that is required for a water right.

Temperature

Though temperature calculations have not been included in this spreadsheet, the Department recognizes temperature as a valid water quality concern for some beneficial uses. For example, aesthetic fish ponds may need to be kept at a specific temperature to preserve aquatic life. At times, ponds may need to be kept full, at a low temperature to minimize evaporation when air temperatures are above average. For such uses, the applicant will need provide scientific justification for each request for additional diversion rate and volume related to temperature concerns.

Soil Classification with ArcMap

Alternative to Soil Classification with the NRCS Web Soil Survey

This spreadsheet has been designed by Idaho Department of Water Resources to determine the soil type and classification at the pond site.

This sheet is designed for users with access to ESRI ArcMap and corresponding Geographic Information System software.

External users will need to download the **PondSoils** layer from the IDWR website.

For IDWR employees, the filename and path for the **PondSoils** layer can be found here:
X:\Spatial\Soils\USCS\PondSoils.mdb

The **PondSoils** layer may also be accessed using the WRedit toolbar (Process > Base Layers > Soils).

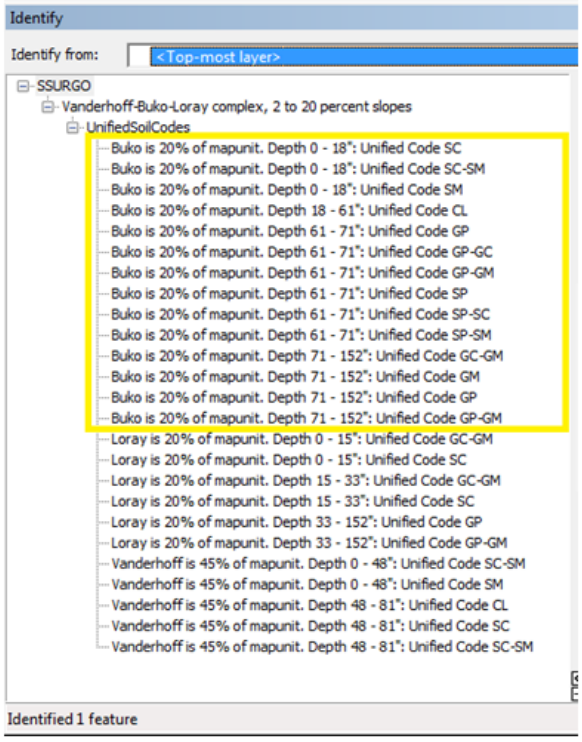
The **PondSoils** layer is comprised of two soils layers:

1. The **SSURGO** (Soil Survey Geographic database) layer contains detailed spatial and attribute data. It covers about $^{2}/_{3}$ of Idaho. If no SSURGO soil polygon is available for an area, the STATSGO soils are shown.
2. **STATSGO** is a more generalized soil layer. It covers about $^{1}/_{3}$ of Idaho. The STATSGO (State Soils Geographic database) layer will provide a few short remarks about the soil classification.

An example from each of the layers is shown below:

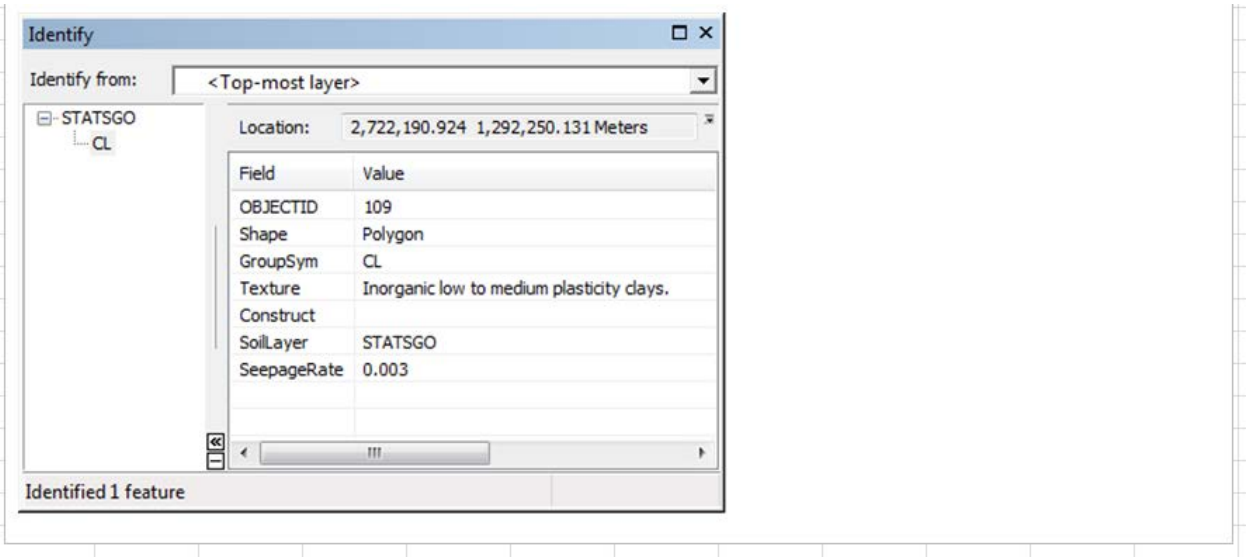
1. **SSURGO**

- The percent (%) each soil component comprises of the soil type is shown. The percentages shown for the soil components may not add up to 100%. Generally the remainder percentage indicates non-soil areas within the soil type (ie. rock outcroppings or bedrock etc) In the example below, the Buko soil component is highlighted; 15% of the soil type polygon may be rock.
- Each soil type (polygon) can have up to 3 soil components (ie. Vanderhoff-Buko-Loray complex, 2 to 20 percent slopes). There is no polygon feature which displays exactly where each soil component is located.
- Each soil component (ie. Buko) can have up to 6 soil horizons. There is no map feature for a soil horizon.
- Each soil horizon will have a depth range and Unified Soil Code (ie SP). When looking at the soil horizons, they may not sort in order of depth.



2. STATSGO

- The STATSGO (State Soils Geographic database) layer will provide the Unified Soil Code, soil texture, remarks on pond ponstruction (if applicable), and an average seepage rate (feet per day) in non-gravelly soils.
- For gravelly soils, a pond liner may be necessary. Even in gravelly soils, 0.2 feet per day is the maximum seepage rate allowable.



Soil Classification with Published Soil Surveys

Alternative to Soil Classification with the NRCS Web Soil Survey

This spreadsheet has been designed by Idaho Department of Water Resources to determine the soil type and classification at the pond site.

FILE NUMBER	xx-xxxxx	Print Page to PDF	User Input
REVIEWER	Joe Agent		Calculated value
DATE	1/1/00		Formula Explanations

County: Ada , Idaho

1. Navigate to the NRCS Soil Survey Website

NRCS Published Soil Surveys for Idaho found at:

http://www.nrcs.usda.gov/wps/portal/nrcs/surveylist/soils/survey/state/?stateId=ID

Reviewer used the Survey entitled: Ada County Area

2. Use GIS and the Soil Survey to determine Soil Type

Utilize ArcGIS to Obtain the Soil Symbol (may be a number or abbreviated name)

The shapefile SSURGOOnePlan is found at X:\Spatial\Soils\SSURGOOnePlan\soils.shp

Soil Symbol (GIS field MUSYM): 116 What if my Soil Symbol is 999?* (see box

Find the name of the soil in the Soil Legend.

The Soil Legend is typically the last bookmark in the Soil Survey report.

The Full Name of This Soil is: Payette-Quincy complex, 15 to 30 percent slopes

3. Use the Soil Survey to determine the USCS Classification

Within the county NRCS Soil Survey report, click the bookmarked link to "Tables."

Scroll down until you reach a table called "Engineering Properties and Classifications" or "Engineering Index Properties." The table is ordered by soil symbol and the soil name.

Scroll down until you reach the soil which matches your soil symbol and name.

The table lists the USCS Classification for each depth in the soil profile.

Be sure to use the predominant soil classification for the pond depth where seepage occurs.

If the pond has a greater depth than the soil survey, use data from the lowest depth reported.

Pond Depth: 4 feet = 48 inches

The Soil Survey states the soil USCS Classification at 48 inches is SM

How to Read Soil Maps in the NRCS Soil Survey s

The reviewer may need to utilize the soil maps found within the NRCS Soil Survey. The desired bookmark will be named "Index to Map Sheets" or "Detailed Soil Map." The index page displays the county divided up into individual map sheets. Click the sheet which represents the location of the pond under examination. The **small** font number found in the center of each polygon is the Soil Symbol.

For example, the soil symbols shown below include 71, 72, 111, 112, 129, 131, 157, 159 and 178. In the map below, the number 32 is not a soil symbol.

***What if my Soil Symbol is 999 or null?**

The SSURGOOnePlan shapefile displays soil types for much of Idaho, but it does not cover all land area. No soil data is available in GIS for areas which display a Soil Symbol Number of 999.

Many of these null regions are located at Idaho's core - harshly mountainous land. The NRCS has not published Soil Surveys for these locations. On this sheet, type in USCS Soil Classification as "unknown." On the next sheet, a seepage loss rate of 0.2 ft. per day should be used.