## Fiscal Analysis Department

## Minnesota House of Representatives



To: Representative Wagenius

From: Brad Hagemeier, Fiscal Analyst

Date: September 22, 2017

Subject: Environment and Natural Resources Trust Fund Revenue

This memo is in response to your question concerning the amount of revenue the environment and natural resources trust fund would have received over the past ten years if the provisions regarding making loans for water infrastructure in Minnesota Laws 2017, Chapter 96, Section 2, Subdivision 19, Paragraph (a) and the Minnesota Constitution Article 11, Section 14, were implemented ten years ago.

Using the ten year time frame with the most recent information available (FY 2008-FY2017), the corpus of the fund has grown from \$493.9 million to \$1,028.4 million. The amount of income provided by lottery proceeds was \$335.4 million, expenditures totaled \$308.3 million and investment gains totaled \$507.4 million (including FY 2008 and FY 2009 which had negative investment returns).

In order to estimate the effect of using five percent of the corpus of the fund for loans, a number of assumptions needed to be made; a list of assumptions appears on the next page. The figures used in the following paragraphs and in Table 2 are only estimates to give an approximation to the potential impact loans would have on the fund and any changes to the assumptions could change these estimates. Given these assumptions the original amount of loans that would have been made over the last ten years would be approximately \$60.5 million. Over the ten year period; \$18.0 million in loan principle would have been repaid and \$3.2 million in loan interest would have been paid.

The net result of this scenario would be total investment gains of \$485.2 million and an ending balance of the corpus being \$1,006.2 million. The corpus would include \$45.4 million in outstanding loan principle at the end of FY 2017. This balance is \$22.2 million less than what was actually achieved during the time period with the environment and natural resources trust fund. The estimated reduction of investment income is a result of the \$60.5 million used for loans over the ten year period only receiving a 1% rate of return compared to the actual average rate of return on the fund of 6.9% over the same time period.

The lower balance in the corpus would have also reduced the amount of the fund available to appropriate annually. The "Out-flow" represented in Table 2 is the amount available to appropriate each year and was not altered for this estimate but would have been different had the loans been made since these amounts would exceed the Constitutional limit of 5.5% of the corpus of the fund. The reduction to the amount available to appropriate would vary by year but would be in the range of \$3-4 million in total over the ten year period and would exceed \$1 million annually by FY 2017.

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## Assumptions:

- Five percent of the corpus is used for loans and held as an asset within the corpus, adjusting the current asset allocation proportionally. Investment gains from the SBI provided chart are reduced five percent to account for the reduced assets in the current asset allocation.
- The full five percent maximum available for loans was used in FY 2008. The amount of loans and amount available for loans was recalculated each fiscal year. If the amount of outstanding loans exceeded five percent of the corpus no additional loans were made that year. If the amount of outstanding loans was less than five percent of the corpus, additional loans were made in the amount necessary for the loans to meet the five percent maximum.
- All loans are made on July 1<sup>st</sup> of the fiscal year.
- All loan payments are made once annually on June 30<sup>th</sup> of the fiscal year, including the first fiscal year in which the loan was distributed.
- All loans are amortized over 20 years with equal payments (once annually) being made in each of the 20 years.
- All loans earn a 1% annual interest rate.
- Returns are not adjusted for inflation.
- All loans are repaid on time without any defaults.

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Reg. Balance         9717         F15         F15         F14         <			Environment and Na	nt and Natur	al Resource	itural Resources Trust Fund Actual Performance: FY 2008-FY 2017	Actual Perfor	mance: FY 20	308-FY 2017			
8.705         882,489,260         714,087,086         614,736,995         574,884,921         460,515,847         401,513,139         465,855,096           1.607         34,524,333         32,189,665         34,734,488         31,316,554         37,461,000         31,561,021         29,909,000           0,566         33,888,326         33,858,916         25,361,980         25,385,619         25,653,619         25,651,773         22,889,843           2,298         892,988,705         842,499,260         714,087,086         614,736,995         574,884,921         460,515,847         401,513,139         401,513,139           3,593         50,489,445         128,412,174         99,350,091         39,852,074         114,369,074         59,002,708         -64,341,957           4,11         FY14         FY14         FY12         FY14		FY 17			FY 14	FY 13	FY 12	FY 11	FY 10		FY 08	TOTALS
1,607         34,542,433         32,189,665         34,734,88         31,316,554         37,461,000         31,561,021         29,990,000           0,506         33,858,326         33,858,916         25,361,386         25,563,619         25,653,619         25,651,773         22,889,843           2,492         49,775,337         130,081,424         89,977,584         33,895,061         102,561,692         53,093,460         -71,361,114           2,298         892,958,705         842,499,260         714,087,086         614,736,995         574,884,921         460,515,847         401,513,139           3,593         50,459,445         128,412,174         99,350,091         39,852,074         114,369,074         59,002,708         -64,341,957           6,133         822,564,882         614,736,995         574,884,921         86,0515,847         401,511,313           6,143         82,473,402         873,402,062         463,929,103         407,356,648         467,894,796           1,607         34,542,433         32,189,665         34,734,488         31,316,554         37,461,000         31,561,021         29,990,000           0,506         33,858,326         34,734,488         31,316,554         37,461,000         31,561,031         29,693,740	Beg. Balance	924,152,298		842,499,260	714,087,086	614,736,995	574,884,921	460,515,847	401,513,139		493,939,833	
0, 506         33,858,326         33,858,916         25,359,541         25,653,619         25,653,619         22,653,1773         22,889,843           2,492         49,775,337         130,081,424         89,977,584         33,855,061         102,561,692         53,093,460         -71,361,114           2,228         882,958,705         842,499,266         714,087,086         614,736,995         574,884,921         460,515,847         401,513,139         -71,361,114           2,228         882,958,705         128,412,174         99,350,091         39,852,074         114,369,074         59,002,708         -64,341,957           3,533         50,459,445         128,412,174         99,350,091         39,852,074         114,369,074         59,002,708         -64,341,957           4,874         128,412,174         99,350,091         39,852,074         114,369,074         59,002,708         -64,341,957           1,607         34,824         128,412,174         99,350,091         39,852,074         114,369,074         59,002,708         -64,341,957           1,607         34,542,089         611,846,084         573,402,062         463,929,109         467,884,786         31,346,736         467,884,786         467,884,786           5,507         34,562,016         25,361,989 </td <td>Contributions</td> <td>35,349,779</td> <td></td> <td>34,542,433</td> <td>32, 189, 665</td> <td>34,734,488</td> <td>31,316,554</td> <td>37,461,000</td> <td>31,561,021</td> <td>29,909,000</td> <td>30,645,000</td> <td>335,350,547</td>	Contributions	35,349,779		34,542,433	32, 189, 665	34,734,488	31,316,554	37,461,000	31,561,021	29,909,000	30,645,000	335,350,547
2,492         49,775,337         130,081,424         89,977,584         33,895,061         102,561,692         53,093,460         -71,361,114           2,298         892,598,705         842,499,260         714,087,086         614,736,995         574,884,921         460,515,847         401,513,139           3,593         50,459,445         128,412,174         99,350,091         39,852,074         114,369,074         59,002,708         -64,341,957           At Land Extimated Performance Had         FV 14         FV 14         FV 14         FV 10         FV 09         FV 09           6,13         822,264,823         707,003,220         611,846,084         573,402,062         463,929,109         407,356,488         467,884,796           1,607         34,542,433         32,886,306         23,359,41         25,653,619         25,651,773         22,889,843           2,507         44,63,241         36,530,103         27,110,89         27,103,86         32,200,308         31,561,021         23,394,706           3,507         33,883,326         33,888,326         34,734,488         31,105,56         25,442,532         23,394,706           4,867         44,63,241         36,487,706         27,195,465         27,442,532         23,394,70	Out-flow	46,397,668		33,858,326	33,858,916	25,361,980	25,359,541	25,653,619	25,651,773		22,875,134	308,307,306
2,298         892,958,705         842,499,260         714,087,086         614,736,995         574,884,921         460,515,847         401,513,139         401,513,139           3,593         50,459,445         128,412,174         99,350,091         39,852,074         114,369,074         59,002,708         -64,341,957           Interval Resources         FY 18	Investment Gain or (loss)			49,775,337	130,081,424	89,977,584	33,895,061	102,561,692	53,093,460		-35,854,603	507,387,336
Hand   Hesources   FY 14   FY 14   FY 14   FY 14   FY 15   F	End Balance	1,028,370,411		892,958,705	842,499,260	714,087,086	614,736,995	574,884,921	460,515,847		465,855,096	
latural Resources Trust Fund Estimated Performance Had Loans Been Made: FY 2008-FY2017           FY 15         FY 14         FY 14         FY 16         FY 10         FY	Net Change	104,218,114		50,459,445	128,412,174	99,350,091	39,852,074	114,369,074	59,002,708		-28,084,737	534,430,579
Environment and Natural Resources Trust Fund Estimated Performance Had Loans Been Made: FY 2008-FY2017           FY 17         FY 16         FY 15         FY 14         FY 14         FY 16         FY 10         FY 10 <th>source: Minnesota State</th> <th>e Board of Invest</th> <th>tment (SBI)</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>	source: Minnesota State	e Board of Invest	tment (SBI)									
FY 17         FY 16         FY 18         FY 12         FY 12         FY 10         FY 10 <th< th=""><th>TABLE 2</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></th<>	TABLE 2											
FV 16         FV 16         FV 16         FV 14         FV 14         FV 14         FV 14         FV 10         FV 10 <th< th=""><th></th><th>Environme</th><th>ent and Natur</th><th>al Resources</th><th>Trust Fund E</th><th>stimated Per</th><th>formance Ha</th><th>ad Loans Bee</th><th>n Made: FY</th><th>2008-FY2017</th><th></th><th></th></th<>		Environme	ent and Natur	al Resources	Trust Fund E	stimated Per	formance Ha	ad Loans Bee	n Made: FY	2008-FY2017		
907,284,926877,650,133829,264,823707,003,220611,846,084573,402,062463,929,109407,356,48467,894,79635,349,77937,641,60734,542,43332,189,66534,734,48831,316,55437,461,00031,561,02129,909,00046,397,66846,400,50633,858,32633,858,91625,361,98025,359,54125,653,61925,651,77322,889,843109,502,70337,954,86747,286,570123,577,35385,478,70532,200,30897,433,60750,438,787-67,793,05845,364,24643,882,50741,463,24135,350,16130,592,30428,670,10323,196,45520,367,83223,394,74041,201,66739,027,26433,305,13728,859,39027,110,89021,954,64521,298,36622,442,53223,575,37045,364,248,855,2438,158,1046,490,7713481,4146,715,4581,898,090-2,074,700-180,63045,364,248,339,60247,701,203123,930,85485,784,62832,487,00997,665,57250,663,212-67,557,3052,886,6932,485,9772,045,0241,732,9151,732,9151,244,166407,355,648407,355,648447,3556,48		FY 17			FY 14		FY 12		FY 10		FY 08	TOTALS
35,349,779         37,641,607         34,542,433         32,189,665         34,734,488         31,316,554         37,461,000         31,561,021         29,909,000           46,397,668         46,400,506         33,858,326         33,858,916         25,351,980         25,539,541         25,653,619         25,651,773         22,889,843           109,502,703         37,954,867         47,286,570         123,577,353         85,478,705         32,200,308         97,433,607         50,438,787         -67,793,058           45,364,246         43,882,507         41,463,241         35,350,161         30,592,304         23,196,455         20,367,832         23,394,740           44,201,667         39,027,264         33,305,137         28,859,390         27,110,890         21,954,645         21,298,366         -2,074,700         -180,630           41,201,673         4,855,243         8,158,104         6,490,771         3,481,414         6,715,458         1,898,090         -2,074,700         -180,630           45,364,25         483,394,62         38,393,692         47,701,203         123,390,854         85,784,628         32,487,009         97,665,572         50,663,212         -67,557,305         -180,630           2860,834         2,680,839         2,435,977         2,045,024 <td< td=""><td>NEW Beginning Bal</td><td>907,284,926</td><td></td><td>829,264,823</td><td>707,003,220</td><td>611,846,084</td><td>573,402,062</td><td>463,929,109</td><td>407,356,648</td><td></td><td></td><td></td></td<>	NEW Beginning Bal	907,284,926		829,264,823	707,003,220	611,846,084	573,402,062	463,929,109	407,356,648			
46,397,668         46,400,506         33,8S8,326         33,8S8,916         25,354,980         25,535,541         25,653,619         25,651,773         22,889,843           109,502,703         37,954,867         47,286,570         123,577,353         85,478,705         32,200,308         97,433,607         50,438,787         -67,793,058         -67,793,058           45,364,246         43,882,507         41,463,241         35,350,161         30,592,304         28,670,103         23,196,455         20,367,832         23,394,740           44,201,667         39,027,264         33,305,137         28,859,390         27,110,890         21,954,645         21,298,366         22,442,532         23,575,370           41,201,667         4,855,243         8,158,104         6,490,771         3,481,414         6,715,458         1,898,090         -2,074,700         -180,630           433,642         4,855,243         8,158,104         6,490,771         3,481,414         6,715,458         1,231,965         224,425         235,753           109,956,345         38,393,692         47,701,203         123,930,854         85,784,628         32,487,009         97,665,572         50,663,212         67,557,305           2,896,693         2,680,839         2,435,977         2,045,024         1,732,9	Contributions	35,349,779		34,542,433	32, 189, 665	34,734,488	31,316,554	37,461,000	31,561,021	29,909,000	30,645,000	335,350,547
109,502,703         37,954,867         47,286,570         123,577,353         85,478,705         32,200,308         97,433,607         50,438,787         -67,793,058           45,364,246         43,882,507         41,463,241         35,350,161         30,592,304         28,670,103         23,196,455         20,367,832         23,394,740           41,201,667         39,027,264         33,305,137         28,859,390         27,110,890         21,294,645         21,298,366         22,442,532         23,575,370           41,201,667         4,855,243         8,158,104         6,490,771         3,481,414         6,715,458         1,898,090         -2,074,700         -180,630           433,642         43,836,242         41,632         353,502         353,502         36,784,628         32,487,009         97,665,572         50,663,212         -67,557,305           109,956,345         38,393,692         47,701,203         1,732,930,854         85,784,628         32,487,009         97,665,572         50,663,212         -67,557,305           2,896,693         2,680,839         2,435,977         2,045,024         1,732,915         1,732,915         1,144,166         1,132,838           1,006,193,382         907,284,926         877,650,133         829,264,823         707,003,220 <td< td=""><td>Out-flow</td><td>46,397,668</td><td></td><td>33,858,326</td><td>33,858,916</td><td>25,361,980</td><td>25,359,541</td><td>25,653,619</td><td>25,651,773</td><td></td><td>22,875,134</td><td>308,307,306</td></td<>	Out-flow	46,397,668		33,858,326	33,858,916	25,361,980	25,359,541	25,653,619	25,651,773		22,875,134	308,307,306
45,364,246         43,882,507         41,463,241         35,350,161         30,592,304         28,670,103         23,196,455         20,367,832         23,394,740           41,201,667         39,027,264         33,305,137         28,859,390         27,110,890         21,954,645         21,298,366         22,442,532         23,575,370           4,162,579         4,855,243         8,158,104         6,490,771         3,481,414         6,715,458         1,898,090         -2,074,700         -180,630           453,624         438,825         414,632         353,502         305,923         305,923         2286,701         231,965         50,663,212         -67,557,305           109,956,345         38,393,692         47,701,203         123,930,854         85,784,628         32,487,009         97,665,572         50,663,212         -67,557,305           2,896,693         2,680,839         2,435,977         2,045,024         1,732,915         1,559,213         1,241,810         1,144,166         1,132,838           1,006,193,382         907,284,926         877,650,133         829,264,823         707,003,220         611,846,084         573,402,062         463,929,109         407,355,648	95% Investment Gain	109,502,703		47,286,570	123,577,353	85,478,705	32,200,308	97,433,607	50,438,787		-34,061,873	482,017,969
41,201,667         39,027,264         33,305,137         28,859,390         27,110,890         21,954,645         21,298,366         22,442,532         23,575,370           4,162,579         4,855,243         8,158,104         6,490,771         3,481,414         6,715,458         1,898,090         -2,074,700         -180,630           453,642         438,825         414,632         353,502         305,923         286,701         231,965         224,425         235,754           109,956,345         38,393,692         47,701,203         123,930,854         85,784,628         32,487,009         97,665,572         50,663,212         -67,557,305           2,896,693         2,680,839         2,435,977         2,045,024         1,732,915         1,259,213         1,241,810         1,144,166         1,132,838           1,006,193,382         907,284,926         877,650,133         829,264,823         707,003,220         611,846,084         573,402,062         463,929,109         407,356,648         677,556,648	Loan Amt Maximum	45,364,246		41,463,241	35,350,161	30,592,304	28,670,103	23,196,455	20,367,832		24,696,992	
4,162,579         4,855,243         8,158,104         6,490,771         3,481,414         6,715,458         1,898,090         -2,074,700         -180,630           453,642         438,825         414,632         353,502         305,923         286,701         231,965         224,425         235,754           109,956,345         38,393,692         47,701,203         123,930,854         85,784,628         32,487,009         97,665,572         50,663,212         -67,557,305           2,896,693         2,680,839         2,435,977         2,045,024         1,732,915         1,559,213         1,144,166         1,132,838           1,006,193,382         907,284,926         877,650,133         829,264,823         707,003,220         611,846,084         573,402,062         463,929,109         407,355,648	Outstanding Loans	41,201,667		33,305,137	28,859,390	27,110,890	21,954,645	21,298,366	22,442,532			
453,642         438,825         414,632         353,502         305,923         286,701         231,965         224,425         235,754           109,956,345         38,393,692         47,701,203         123,930,854         85,784,628         32,487,009         97,665,572         50,663,212         -67,557,305           2,896,693         2,680,839         2,435,977         2,045,024         1,732,915         1,559,213         1,241,810         1,144,166         1,132,838           1,006,193,382         907,284,926         877,650,133         829,264,823         707,003,220         611,846,084         573,402,062         463,929,109         407,356,648	Available For Loans	4,162,579		8,158,104	6,490,771	3,481,414	6,715,458	1,898,090	-2,074,700		24,696,992	60,458,651
109,956,345         38,393,692         47,701,203         123,930,854         85,784,628         32,487,009         97,665,572         50,663,212         -67,557,305           2,896,693         2,680,839         2,435,977         2,045,024         1,732,915         1,559,213         1,241,810         1,144,166         1,132,838           1,006,193,382         907,284,926         877,650,133         829,264,823         707,003,220         611,846,084         573,402,062         463,929,109         407,356,648         -	Loan Income	453,642		414,632	353,502	305,923	286,701	231,965	224,425		246,970	3,192,339
2,896,693       2,680,839       2,435,977       2,045,024       1,732,915       1,559,213       1,241,810       1,144,166       1,132,838       1,121,622         1,006,193,382       907,284,926       877,650,133       829,264,823       707,003,220       611,846,084       573,402,062       463,929,109       407,356,648       467,894,796	Total Income	109,956,345		47,701,203	123,930,854	85,784,628	32,487,009	97,665,572	50,663,212		-33,814,903	485,210,308
1,006,193,382 907,284,926 877,650,133 829,264,823 707,003,220 611,846,084 573,402,062 463,929,109 407,356,648	Loan Principal Payment	2,896,693		2,435,977	2,045,024	1,732,915	1,559,213	1,241,810	1,144,166		1,121,622	17,991,097
	NEW Ending Balance	1,006,193,382		877,650,133	829,264,823	707,003,220	611,846,084	573,402,062	463,929,109		467,894,796	

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