BROWNE, BORTZ & CODDINGTON, INC.

8 January 1988

Mr. Ray S. Wells
Administrator
c/o Cherry Creek Basin Water Quality Authority
Carrara Place, Suite 150
6200 South Syracuse Way
Englewood, Colorado 80111

Dear Mr. Wells:

This letter sets forth the results of Browne, Bortz & Coddington, Inc.'s (BBC) analysis of alternative rate structures conducted for the Cherry Creek Basin Water Quality Authority (Authority).

Conclusions

The Cherry Creek Basin Authority has a variety of fees, charges and taxes potentially available to them as means for generating operating and capital requirements associated with improving water quality conditions at the Cherry Creek Reservoir. This study describes and evaluates a number of rate structures, each a combination of fees, charges and taxes that are capable of generating necessary revenues. Each alternative is a compromise between revenue generation capabilities, administrative practicability and fairness to rate payers.

From this process, the following rate structure and fee levels are recommended:

Category	Financial Responsibility	Fee Level
Property tax	District property owners	.27 mill property tax
Water surcharge	Those with sewer districts discharging in basin	.013/1,000 gallons
Development/grading	New development	$280/graded acre
Reservoir user fee	Reservoir visitors	$1.00/car

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The above rates will generate over $25 million in Authority revenues (1987 dollars) between 1988 and 2010 and approximately $800,000 in the first year of operation.

Background and Objectives

The Cherry Creek Basin Water Quality Authority was instituted to address existing and future water quality issues within the Cherry Creek drainage basin. The basin encompasses a broad area within southern Arapahoe and Douglas Counties as well as a small portion of El Paso and Elbert Counties. The Authority, in association with other regional planning organizations, has completed the Cherry Creek Basin Master Plan, which describes a variety of construction options and development regulations available to further Authority objectives.

Present Authority funding from member dues is inadequate to meet future capital requirements or ongoing operational needs. The Authority is presently seeking alternative means for raising necessary revenues.

In November 1987, BBC was retained to assist the Authority's Finance Committee with developing and evaluating alternative rate structures suitable for generating long term capital improvement funding. It is the Authority's intention to determine an optimum funding program that is practical, equitable and feasible.

The process summarized in this report was intended to answer four basic questions:

- What potential sources of revenue can be developed?
- What are the anticipated, present and future revenue yields of the various revenue sources identified?
- How do these sources of revenues compare on the basis of equity and feasibility criteria?
- Assuming various mixes of revenue sources, deemed both feasible and equitable, what is the financial capacity of the Authority to accomplish improvements over the next 20 years?

This report summarizes the results of the funding analysis and forecasting process.

Approach

In early November 1987, BBC personnel met with the Finance Committee to review project goals and gather data on the specific issues to be addressed in the study. Financing arrangements for similar institu-

tions were investigated to determine possible revenue sources. The Committee provided a brief history of the Authority and its accomplishments to date in order to avoid duplication of past efforts. BBC was also directed to a number of reference documents describing the nature, magnitude and sources of reservoir pollution problems.

Following an initial meeting, BBC evaluated a variety of economic and demographic statistics related to growth and development in the basin and designed a computerized model suitable for forecasting basin-wide population, assessed valuation, construction activity, water/sewer development and other related growth indicators. Forecasts were developed through the year 2010 based principally on prior work completed by Denver Regional Council of Governments, Douglas County and others.

In addition, BBC developed a list of approximately one dozen potential revenue sources to be considered for use by the Authority. The revenue sources were evaluated in terms of ease of administration, legality, equity and revenue generation potential. With Authority input, the list of revenue sources was narrowed to nine taxes, charges or fees considered suitable for further evaluation.

Through modeling of the proposed revenue structures and expected basin growth, BBC developed estimates of total annual revenues accruing to the Authority under various rate design formats. Projections under a low and medium growth scenario were also prepared to determine sensivity to growth projections. A number of alternatives were presented to the Authority Finance Committee in mid-December--discussions ensued regarding the equity, burden, administrative ease and revenue potential of the various alternatives. Based on these discussions, BBC prepared this report which details three options (including a recommended option) for structuring a long term financing plan.

The Water Quality Problem

An understanding of the reservoir phosphorous problem is required in order to determine which groups contribute to basin pollution problems and which groups might benefit from cleaning up the Cherry Creek Reservoir.

Considerable study has been completed on the Cherry Creek Reservoir pollution issue by the Denver Regional Council of Governments as well as the Cherry Creek Basin Water Quality Authority. The Cherry Creek Basin Water Quality Master Plan (1985) identifies a variety of means for achieving reduced phosphorous levels with the Cherry Creek Reservoir. The plan makes specific recommendations with respect to four major topics:

- point source control
- nonpoint source control
- phosphorous allocation among sources
- institutional responsibilities

The Cherry Creek Reservoir is situated in the rapidly growing southern Denver area and considerable growth is forecasted to occur in its vicinity. The reservoir basin is largely underdeveloped at this time thus any past reservoir water quality degradation was primarily the result of natural background sources. It is the Authority's goal to maintain water quality at a level defined by 1982 monitored conditions.

Water quality degradation at the reservoir is a complex phenomenon, and it is difficult to isolate specific sources of phosphorous loading. It is generally believed that a portion of the phosphorous problem stems from common storm runoff over soils with naturally high phosphorous levels. It is also understood that urbanization exacerbates phosphorous loading problems by concentrating runoff, increasing impervious area, turning over soils during construction activity and increasing phosphorous levels through fertilization.

A 1984 analysis estimated that storm runoff contributed approximately 90 percent of phosphorous loading in that year. Soil disturbance in the basin, most often associated with new construction activity, contributes to the runoff problem. The sewage treatment facilities currently discharging in the basin are relatively modest contributors to phosphorous loading. Activity at the Cherry Creek Reservoir, (including disturbance of pre-existing bottom deposits by bathers and motorboats), organic waste from the facilities' 1.3 million visitors and even the presence of a large number of water fowl, also contributes to the reservoir pollution levels.

The basin master plan projects the following assumptions contribution regarding phosphorous loading:

Projected Annual Phosphorous Loading

	1990		2000		2010	
	Pounds	Percent	Pounds	Percent	Pounds	Percent
Point	675	5%	2,310	9%	4,210	9%
Nonpoint	10,835	85	21,531	86	43,909	89
Background	1,170	10	1,170	5	1,170	2
Total	12,680	100%	25,011	100%	49,289	100%

Source: Cherry Creek Basin Master Plan, DRCOG, 1985.

In sum, reservoir pollution is a naturally occurring phenomenon that is exagerated by urbanization, new construction, user demands on the reservoir's system and sewage system discharge.

Beneficiaries of Water Quality Improvements

The Cherry Creek Reservoir is a flood control and recreational resource for the Denver Metropolitan Area. Its original purpose was to protect the City of Denver and other downstream areas that are

otherwise subject to periodic flooding. Recreational use was then added to the project design. Reservoir activity has remained fairly stable over recent years:

Cherry Creek Reservoir

Year	Visitor Days
1986-87	1,300,019
1985-86	1,308,911
1984-85	1,279,922

Cherry Creek Reservoir is a multifunctional facility with use ranging from general swimming and recreation to water skiing, camping, jogging, bicycling and horseback riding. A 1982 study of reservoir user perceptions of water quality in Cherry Creek Reservoir, found visitors were well aware of pollution problems and willing to pay an average of over $3 per visit for water quality improvements.

Enhancement of reservoir water quality would most directly benefit reservoir users. Area residents are also benefited to the degree that proximity to a clean reservoir enhances quality of life and property values. Downstream residents, who benefit only from flood control aspects of the reservoir, are unaffected by water quality. Upstream land owners, who do not use the reservoir, are similarly unaffected by water quality issues.

Economic Development Background

Existing conditions. Estimates for 1987 indicate that about 48,000 people reside within the Arapahoe and Douglas Counties portions of the basin. Demographic data were derived from two DRCOG reports, the Draft 1987 Clean Water Plan and the 1986 Population and Employment Forecast Distributions study. These data were updated to 1987 based upon recent growth trends. Population in 1980 totaled about 29,000 people. The El Paso County and Elbert County areas contribute only modestly to basin population totals and are not considered in this analysis. In 1987, there were about 17,000 households in the basin.

Based upon a recent Tri-county Health study, there are now 3,200 residential units utilizing septic systems in the Arapahoe-Douglas County portions of the basin. Past DRCOG analyses indicate about 7,500 units in the basin connected to the Metropolitan Denver Sewage Disposal District which discharges effluent outside the basin. About 6,300 households are served by sewer systems that discharge within the basin.

Employment estimates for the basin are based upon the two recent DRCOG studies noted above. About 8,700 employees are located in areas served by sewer systems discharging outside the basin, while about 15,800 employees are served by sewer systems discharging within the basin. Basin employment outside of sewered areas is negligible.

Present assessed valuation in the Authority District is in excess of $700 million.

Available forecasts. Recent analyses of the basin portray conflicting growth expectations. Projections include:

- 1984 DRCOG Clean Lakes Study
  - (a) DRCOG projections
  - (b) Douglas County projections
  - (c) Developer projections
- 1985 DRCOG Master Plan
- 1987 DRCOG Draft Clean Water Plan
- 1987 University of Colorado Gateway Study (geographic study area limits its applicability)

None of these projections were directly applicable to this analysis. Comparable basin-wide forecasts, excluding Elbert and El Paso Counties, were constructed from the available studies. These forecasts are shown in Figure 1. "Mid-range" and "low range" projections were also derived for the purposes of this analysis.

Average annual population growth under each projection is shown in Figure 2. Average growth for 1985 to 2000 for each of the available forecasts ranges from 4,190 to 9,640 persons per year. For purposes of this analysis, mid-range population projections for 1985 to 2010 reflect annual growth of 4,520. Low range or "worst case" projections are formulated based upon annual growth one-half that of the mid-range projections.

Population growth was distributed among three groups: (1) sewered discharging in basin, (2) sewered discharging out of basin and (3) septic tank development. Distributions are based on the 1987 DRCOG Clean Water Plan data.

The number of basin households, derived from the mid-range and low population projections and assumptions regarding persons per household, are displayed below:

Household Forecasts for the Cherry Creek Basin
(Excluding Elbert and El Paso Counties)

	Sewered Discharge Out of Basin	Sewered Discharge In Basin	Septic Tank	Total
Mid-Range				
1987	7,480	6,300	3,200	16,980
2010	18,520	30,220	6,190	54,930
Low Range				
1987	7,480	6,300	3,200	16,980
2010	13,000	18,260	4,695	35,955

FIGURE 1. ALTERNATIVE POPULATION FORECASTS FOR THE CHERRY CREEK BASIN (EXCLUDES ELBERT AND EL PASO COUNTIES)

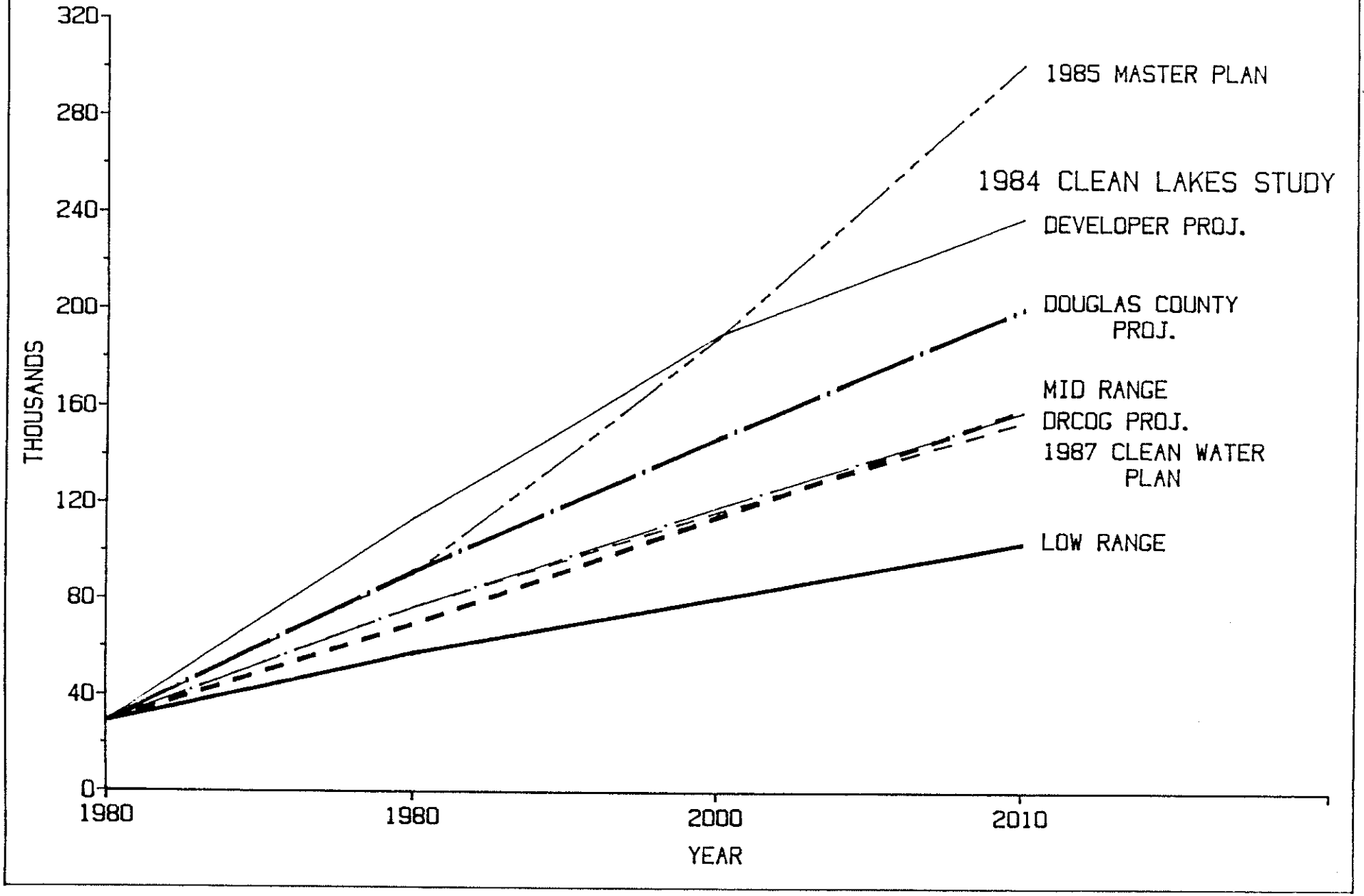
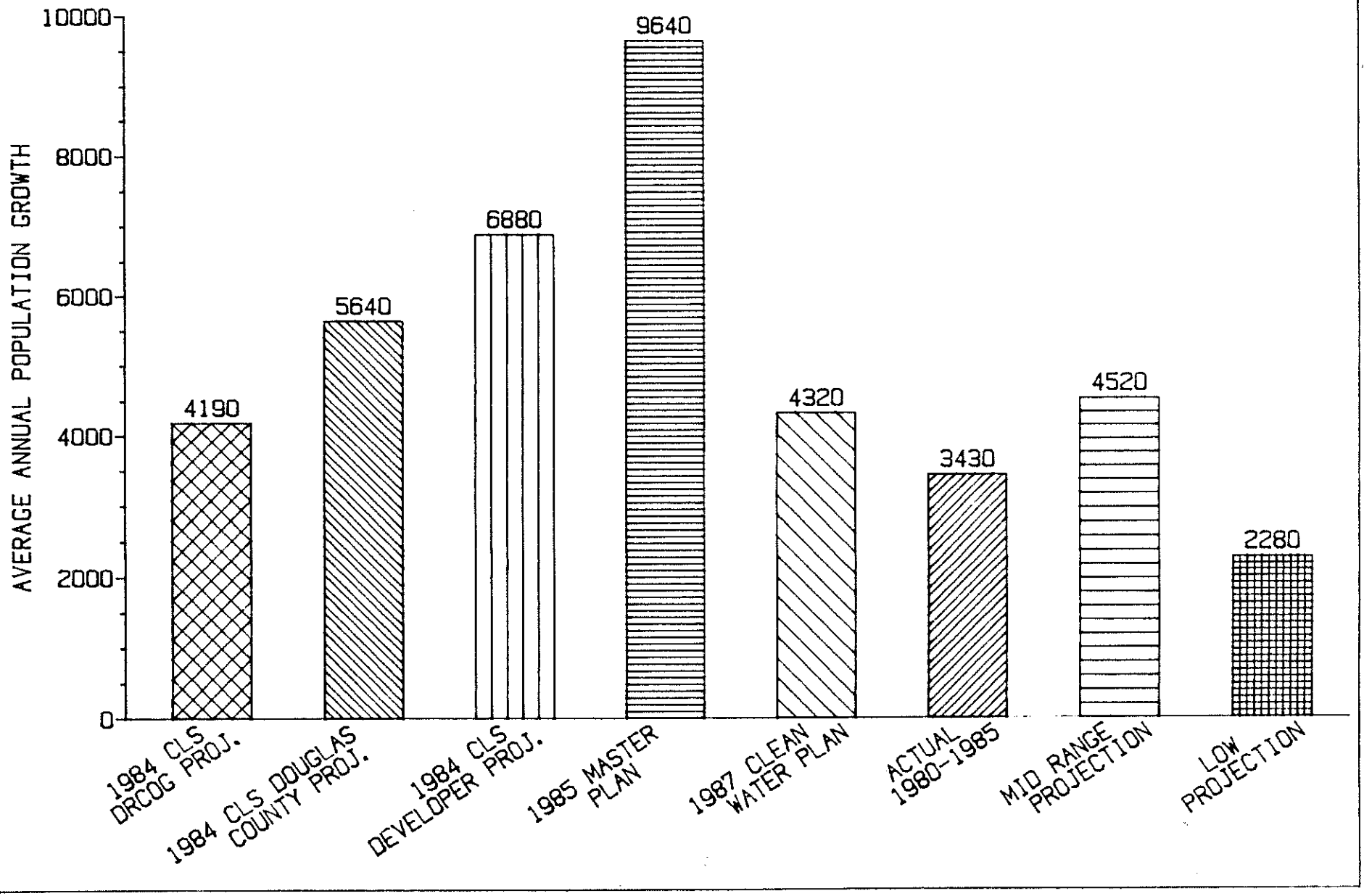


FIGURE 2. ALTERNATIVE ANNUAL BASIN GROWTH PROJECTIONS, 1985 - 2000



Forecasts of commercial development within the basin are formulated from projections of employment growth. Employment forecasts based on the Clean Water Plan were applied as mid-range projections for the financial study. Low range projections reflect employment growth of one-half the rate assumed in the Clean Water Plan:

Employment Projections for the Cherry Creek Basin

	Sewered Discharge Out of Basin	Sewered Discharge In Basin	Total
Mid-Range			
1987	8,700	15,800	24,500
2010	40,000	56,700	96,700
Low Range			
1987	8,700	15,800	24,500
2010	24,400	36,200	60,600

Mid-range or "most reasonable," forecasts utilize the following basin development expectations.

Development Forecasts

Category	Growth 1988-2010
Residential	
Septic	130 units/year
Sewered (in basin)	1,040 units/year
Sewered (outside basin)	480 units/year
Commercial	
Sewered (in)	445,000 sq. ft./year
Sewered (out)	340,000 sq. ft./year
New reservoir users	50,000/year

Alternative Revenue Sources

For evaluation purposes, prospective revenue sources were divided into four categories:

- Taxes
- One time fees (development impact fees)
- Ongoing charges
- Other charges and fees

Table 1 summarizes the various revenue sources considered in this analysis and certain of the implementation and equity considerations that characterize each charge.

TABLE 1. EVALUATION OF ALTERNATIVE REVENUE STREAMS

Charges	Implementation	Revenue Potential	Burden	Equity Considerations
Taxes				
Property taxes	• easy to administer • small proportion of existing tax	High	• land owners in proportion to value	• loosely related to contribution to runoff; Douglas County debating district overlap issues
One Time Fees				
Development (impact)/ grading fee	• collected as a surcharge on building permit or C.O. • piggyback on Arapahoe County grading fee • administrative difficulties in Douglas County	High	• new developments; e.g. large projects	• could adjust for different types of development; directly related to soil disturbance; can also force measures to control problem (best practices)
Sewer tap fees	• requires individual districts to collect fees • moderate increase in existing fees	Moderate	• sewered new growth (in basin discharge)	• allows new growth to pay in proportion to effluent contribution; avoids charging out of basin sewered and septic
Septic tank permit fees	• piggyback on Tricounty Health fee • state law might restrict amount of fee • large increase in existing fees	Very low	• nonsewered new growth	• related to effluent from septic systems; allows new growth to pay
Ongoing Charges				
Land area (per acre charge)	• utilize assessor's records; charge with property assessment; administratively awkward	Moderate	• land owners in proportion to acreage	• tied to general runoff problem; could weight by % impervious
Water rate surcharge	• requires districts to collect fees • moderate increase in existing fees • can customize to base on average winter use	Moderate	• district water users; discharging in basin only	• applies to all sewered in basin; related to volume of wastewater generated; watering of large lots pays high fees
Septic tank charges	• requires mechanism to collect revenues	Low	• nonsewered residents	• related to effluent from septic systems; treats existing vs. new growth the same
Impervious area charges	• a number of options available; likely piggyback to other review process fees or water bill	Moderate	• land owners	• directly related to runoff; treats existing vs. new growth the same
Other				
Reservoir user fees	• collected as part of entrance fee • some administrative problems, e.g., walk in users.	High	• reservoir users	• directly relates to beneficiaries; also relationship to cause of problem

As a rule, one time fees can be applied to construction activity in order to recover a portion of costs associated with new growth and soil disturbance. Ongoing charges or taxes are best suited for recovering those costs associated with continuing to pollution problems such as generating runoff. Finally, charges on sewage systems discharging into the basin can be an effective means for recovering costs associated with phosphorous discharge by sewage treatment plants.

Proposed Rate Structures

After evaluating rate structure alternatives with the Finance Committee and testing alternatives for revenue generation as well as equity and administrative considerations, three alternative systems have been proposed.

In all scenarios, it is assumed that Cherry Creek Reservoir users, as the principal beneficiaries of reservoir clean up expenditures, will bear half the cost of phosphorous reduction investments. The allocation of financial responsibility to reservoir users is further supported by technical data that indicate that a portion of phosphorous loading is attributable to natural conditions and reservoir user practrices. Although City of Denver and other downstream residents also benefit from the existence of Cherry Creek Reservoir, these areas have not been charged with clean up responsibilities.

Additionally, all rate structures are designed to return approximately $25 million over the period 1988-2000 (1987 dollars), although the precise method and ultimate cost of clean up is uncertain.

The three rate scenarios are labeled the "equity," "administrative simplicity" and "recommended" structures. The equity structure attempts to impose a system in which costs are to the greatest extent borne by those contributing to the problem or benefiting from the solution without regard to administrative issues. The simplified system reflects greater concern for administrative issues and steady revenue flows. The final system represents an attempt to find an acceptable balance between equity, administration, financial and other concerns.

Equity structure. The equity rate structure maximizes fairness in terms of ensuring that those groups creating phosphorous contamination, or benefitting from reduction in phosphorous levels, carry their fair share of clean up costs.

The equity rate structure utilizes a land area charge, development fee, water use surcharge and user charges on Cherry Creek Reservoir visitors to generate income. The proposed charges and revenue goals are summarized below:

Equity Rate Structure

Source of Problem or Beneficiaries	Revenue Goals (Level of Responsibility)	Applicable Charge
General runoff	35	Land are charge adjusted by impervious characteristics
Disturbed soil	10	Development fee adjusted by grading practices
Sewage treatment	5	Water use surchage
Reservoir users	50	User charge
Total	100%	

Actual fees and charges are set at a level that will produce revenues in accordance with the above revenue goals, e.g., new construction will pay directly approximately 10 percent of clean up costs, sewage systems contribute five percent, etc.

Under the equity rate structure, the following taxes, fees or charges are imposed:

Equity System--Tax Structure

Category	Costs
Property taxes	None
Charges	$0.013
Water surcharge*	$0.13/1,000 gallons
Acreage charge	$0.25/acre
Impervious area	$90. per covered acre
Fees	
Grading development	$280 per graded acre
User fees	
Reservoir use	$1.00/Auto

*On systems discharging into basin.

The above charges generate a high level of equity (e.g., the costs of improving the system are borne by those groups that contribute to the problem or benefit from its resolution). The system does have a

number of administrative difficulties associated with its implementation. The water surcharge would be recovered from the districts discharging into the basin. The acreage charge, a fee on the size of property rather than its value, would be imposed by the respective counties and collection difficulties are likely. Further, although an acreage charge is equitable in that a portion of the responsibility for the phosphorous problem is associated with natural runoff, many large landowners such as ranchers in the southern portions of Douglas County will have difficulty in understanding how they contribute to the problems at Cherry Creek Reservoir.

The charge on impervious area suffers from some of the same administrative problems as the acreage charge. The impervious area charge is envisioned as an annual charge paid by property owners based on the percentage of their land covered by an impervious surface. Presently, the City of Denver and a number of other communities in the metropolitan area have instituted these charges as a portion of their wastewater system fees. Although an impervious area charge is highly equitable--in that it forces those persons concentrating runoff to contribute to runoff solutions--such a fee requires that each property be classified by its percentage of impervious land. The individual review involved in implementation could generate substantial administrative costs. At the moment, neither Douglas nor Arapahoe County has a similar fee upon which the Cherry Creek Basin Authority could "piggy back" for administrative efficiency.

A one time fee on the amount of graded or disturbed soil is proposed as a means of recovering costs from new construction activity. It is likely that such a fee would be collected as an impact fee or surcharge on building permits or certificates of occupancy. Administrative problems are modest as Arapahoe County already imposes a grading fee and a similar process is possible in Douglas County. The grading fee is also attractive in that it provides an opportunity to reward developers willing to take measures to control runoff problems. The fee could be designed so that persons acting to control or contain runoff would see a reduction in their charge.

Finally, a user fee of $1 per automobile is proposed for visitors to Cherry Creek Reservoir. Some administrative problems are likely as there are many persons using the reservoir on a State Parks pass, and other persons who walk to the reservoir from nearby housing developments. It may prove necessary to have the state increase charges for passes.

Table 2 reflects Authority revenues over a 22 year period as proposed under the equity rate structure scenario.

Simplied structure. Although the above system produces revenues in proportion to levels of responsibility or benefit, it is also unduly burdensome in certain collection and administrative aspects. The following system is designed to solve administrative problems, but by sacrificing some fairness considerations.

Table 2 Equity Structure — Mid Range Growth

REVENUES AND EXPENSES: (000 1987 $'S)	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2005	2010	CUMULATIVE REVENUES
REVENUES																
TAXES																
PROPERTY	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
TOTAL TAXES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CHARGES																
WATER SURCHARGE	$22	$24	$27	$30	$33	$36	$39	$42	$45	$48	$50	$53	$56	$71	$85	$1,227
ANNUAL SEPTIC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
IMPERVIOUS AREA	$155	$169	$184	$199	$214	$228	$243	$258	$273	$288	$302	$317	$332	$406	$480	$7,293
ACREAGE CHARGE	$53	$53	$53	$53	$53	$53	$53	$53	$53	$53	$53	$53	$53	$53	$53	$1,208
TOTAL CHARGES	$229	$246	$264	$282	$299	$317	$335	$352	$370	$388	$405	$423	$441	$529	$617	$9,728
FEES																
SEWER TAP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
SEPTIC TANK	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
GRADING/DEVELOPMENT	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$2,466
TOTAL FEES	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$2,466
RESERVOIR USER FEES	$443	$453	$463	$473	$483	$493	$503	$513	$523	$533	$543	$553	$563	$613	$663	$12,727
TOTAL BASIN FEES AND CHARGES	$779	$807	$835	$862	$890	$918	$945	$973	$1,001	$1,028	$1,056	$1,084	$1,111	$1,250	$1,388	$24,921
INTEREST INCOME	$0	$16	$32	$49	$68	$87	$107	$128	$150	$173	$197	$222	$248	$395	$572	
TOTAL REVENUES	$779	$822	$867	$912	$957	$1,004	$1,052	$1,101	$1,150	$1,201	$1,253	$1,305	$1,359	$1,645	$1,960	
EXPENSES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
EXCESS OF REVENUES OVER EXPENSES	$779	$822	$867	$912	$957	$1,004	$1,052	$1,101	$1,150	$1,201	$1,253	$1,305	$1,359	$1,645	$1,960	
FUND BALANCES, BEGINNING OF YEAR	$0	$779	$1,602	$2,468	$3,380	$4,337	$5,342	$6,394	$7,494	$8,645	$9,846	$11,099	$12,404	$19,760	$28,602	
FUND BALANCES, END OF YEAR	$779	$1,602	$2,468	$3,380	$4,337	$5,342	$6,394	$7,494	$8,645	$9,846	$11,099	$12,404	$13,763	$21,405	$30,561	

In the simplified system, the impervious area and acreage charges are replaced by a .3 mill levy. Resulting revenues are shown in Table 3. The grading and development fee is maintained so that new development pays its fair share and can be held accountable for grading practices. The property tax levy is desirable as a simple and understandable tax although one which is not strictly in accord with the levels of contribution to the pollution problem. Under the simplified system the following fees are anticipated:

Administrative Simplicity

Category	Costs
Taxes	$.30 mill property tax
Charges	
Water surcharge	None
Acreage charge	None
Impervious area	None
Fees	
Grading development	$280 per graded acre
User fees	
Reservoir use	$1.00/Auto

Again, cummulative Authority revenues are roughly $25 million over the period 1988 to 2010.

Recommended structure. The final rate structure represents an attempt to combine the favorable aspects of the two prior systems. Revenue sources and fee levels are as follows:

Accounts	Fees
Property taxes	.27 mill
Charges (annual)	
Water surcharge	$0.013/1,000 gallons
Impervious area	None
Acreage	None
Fees	
Grading development	$280 per graded acre
User fees	
Reservoir user fee	$1.00/Auto

As reflected in Table 4, total Authority revenues under this system will exceed $25 million under expected development conditions. A degree of equity has been sacrificed by replacing the impervious area and acreage charges with a mill levy for property taxes--this change also greatly reduces administrative costs and complications. Under

Table 3 Administrative Simplicity Mid Range Growth

REVENUES AND EXPENSES: (000 1987 $'S)	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2005	2010	CUMULATIVE REVENUES
REVENUES																
TAXES																
PROPERTY	$232	$250	$268	$286	$304	$322	$340	$358	$376	$394	$412	$430	$448	$537	$627	
TOTAL TAXES	$232	$250	$268	$286	$304	$322	$340	$358	$376	$394	$412	$430	$448	$537	$627	$9,880
CHARGES																
WATER SURCHARGE	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
ANNUAL SEPTIC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
IMPERVIOUS AREA	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
ACREAGE CHARGE	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL CHARGES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FEES																
SEWER TAP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
SEPTIC TANK	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
GRADING/DEVELOPMENT	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$2,466
TOTAL FEES	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$2,466
RESERVOIR USER FEES	$443	$453	$463	$473	$483	$493	$503	$513	$523	$533	$543	$553	$563	$613	$663	$12,727
TOTAL BASIN FEES AND CHARGES	$783	$811	$839	$867	$895	$923	$951	$978	$1,006	$1,034	$1,062	$1,090	$1,118	$1,258	$1,397	$25,073
INTEREST INCOME	$0	$16	$32	$50	$68	$87	$107	$129	$151	$174	$198	$223	$249	$397	$575	
TOTAL REVENUES	$783	$827	$871	$916	$963	$1,010	$1,058	$1,107	$1,157	$1,208	$1,260	$1,313	$1,368	$1,655	$1,973	
EXPENSES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
EXCESS OF REVENUES OVER EXPENSES	$783	$827	$871	$916	$963	$1,010	$1,058	$1,107	$1,157	$1,208	$1,260	$1,313	$1,368	$1,655	$1,973	
FUND BALANCES, BEGINNING OF YEAR	$0	$783	$1,610	$2,481	$3,397	$4,360	$5,369	$6,427	$7,534	$8,691	$9,899	$11,160	$12,473	$19,875	$28,773	
FUND BALANCES, END OF YEAR	$783	$1,610	$2,481	$3,397	$4,360	$5,369	$6,427	$7,534	$8,691	$9,899	$11,160	$12,473	$13,841	$21,530	$30,746	

Table 4 Recommended Structure MID RANGE GROWTH DATE: 12/10/87

REVENUES AND EXPENSES: (000 1987 $'s)	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2005	2010	CUMULATIVE REVENUES
REVENUES																
TAXES																
PROPERTY	$209	$225	$241	$258	$274	$290	$306	$322	$338	$354	$370	$387	$403	$483	$564	
TOTAL TAXES	$209	$225	$241	$258	$274	$290	$306	$322	$338	$354	$370	$387	$403	$483	$564	$3,892
CHARGES																
WATER SURCHARGE	$22	$24	$27	$30	$33	$36	$39	$42	$45	$48	$50	$53	$56	$71	$85	$1,227
ANNUAL SEPTIC	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
IMPERVIOUS AREA	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
ACREAGE CHARGE	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTAL CHARGES	$22	$24	$27	$30	$33	$36	$39	$42	$45	$48	$50	$53	$56	$71	$85	$1,227
FEES																
SEWER TAP	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
SEPTIC TANK	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
GRADING/DEVELOPMENT	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$2,466
TOTAL FEES	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$107	$2,466
RESERVOIR USER FEES	$443	$453	$463	$473	$483	$493	$503	$513	$523	$533	$543	$553	$563	$613	$663	$12,727
TOTAL BASIN FEES AND CHARGES	$781	$810	$839	$868	$897	$926	$955	$984	$1,013	$1,043	$1,072	$1,101	$1,130	$1,275	$1,420	$25,313
INTEREST INCOME	$0	$16	$32	$50	$68	$87	$108	$129	$151	$174	$199	$224	$251	$400	$580	
TOTAL REVENUES	$781	$826	$872	$918	$965	$1,014	$1,063	$1,113	$1,165	$1,217	$1,270	$1,325	$1,380	$1,675	$2,000	
EXPENSES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
EXCESS OF REVENUES OVER EXPENSES	$781	$826	$872	$918	$965	$1,014	$1,063	$1,113	$1,165	$1,217	$1,270	$1,325	$1,380	$1,675	$2,000	
FUND BALANCES, BEGINNING OF YEAR	$0	$781	$1,607	$2,479	$3,397	$4,362	$5,376	$6,439	$7,552	$8,717	$9,933	$11,204	$12,528	$20,007	$29,018	
FUND BALANCES, END OF YEAR	$781	$1,607	$2,479	$3,397	$4,362	$5,376	$6,439	$7,552	$8,717	$9,933	$11,204	$12,528	$13,908	$21,681	$31,019	

the recommended rate structure, sewered residents and businesses, reservoir users and new development continue to pay their fair share of reservoir improvement costs.

Because a large portion of revenues are from an existing base of reservoir users and assessed valuation, Authority revenues are only modestly sensitive to changes in development expectations. A 50 percent decline in growth rates, below the mid-range levels assumed in this study, will drop cumulative Authority revenues (over 22 years) by approximately 21 percent.

Whatever system is finally chosen, a number of administrative and collections issues will have to be worked out with the affected districts and counties. Additionally, certain fees may require a variable rate design or a reward system for advantageous practices (e.g., grading). It is recommended that fee levels reevaluated on a regular basis to ensure that equity considerations are recognized in practice as well theory.

Very truly yours,

Ford C. Frick
Director

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