U.S. Army Corps of Engineers
Water Resources Support Center
Institute for Water Resources

PC-FINPACK

VERSION 1.010

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13. ABSTRACT *(Maximum 200 words)*

The overall purpose of this report is to provide an overview of PC-FINPACK which is a computerized financial analysis and simulation model for water supply and waste water disposal facilities. The rationale underlying the use of financial simulation models is often the assumption that firms' managers wish to maintain a given ratio of debt to equity in the firm's balance sheet. The major postulate of the PC-FINPACK rationale (an extension of the aforesaid debt-to-equity rationale) is that the constancy of the ratio of Total Operating Revenues to Total Assets is an appropriate basis for financial simulation analysis of the accounting data for water supply and waste water disposal facilities. Development of PC-FINPACK was funded by the Partners for Environmental Progress (PEP) Program, and implemented by the U.S. Army Engineer Institute for Water Resources to support Corps analysts in their conduct of financial analyses of projects that public sponsors are preliminarily considering for privatization.

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PC-FINPACK, financial analysis of water supply & waste water disposal facilities, financial analysis for privatization, financial simulation analysis

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N O T I C E

The development of PC-FINPACK has out-paced this March 1993 version of the PC-FINPACK Documentation Report. Users are hereby advised, therefore, that the information contained herein is still applicable to the operations of PC-FINPACK although some cell addresses may a few rows away from their true locations. Users will find that directions, explanations, and helpful comments are distributed throughout the PC-FINPACK spreadsheets. Thus, the IWR Project Manager for PC-FINPACK believes that the cell-location deficiencies do not warrant postponement of the December 1993 delivery of PC-FINPACK to the PEP Program Managers, until publication of an updated Documentation Report.

DTIC QUALITY INSPECTED 2

PC-FINPACK

PURPOSE AND RATIONALE

Development of PC-FINPACK was funded by the Partners for Environmental Progress (PEP) Program, and implemented by the U.S. Army Engineer Institute for Water Resources. The PEP Program of the U.S. Army Corps of Engineers is designed to provide cost-shared planning assistance to communities involved in the planning required to satisfy their water supply and waste water disposal needs. PC-FINPACK is designed to support Corps of Engineers analysts in their conduct of computer-aided financial analyses of water supply projects and waste water disposal projects that public sponsors are considering for privatization.

PC-FINPACK is a computerized financial analysis and simulation model for water supply and waste water disposal facilities. Generally, the overriding rationale underlying the use of financial simulation models is the assumption that the firm's managers wish to maintain a given ratio of debt to equity in the firm's balance sheet.[1] The rationale underlying the development of the PC-FINPACK Model is an extension of the aforesaid generally-applied rationale; axiomatically, therefore, the rationale underlying the operation of PC-FINPACK is the major postulate that the constancy of the ratio of Total Operating Revenues to Total Assets is an appropriate basis for financial simulation analysis of the accounting data for water supply and waste water disposal facilities.

PC-FINPACK uses its input data on water usage to calculate a specific firm's operating revenues--then, the predominant multiplier (the ratio of Total Assets to Total Operating Revenues) is used in conjunction with other multipliers to simulate balance sheets and income statements for each of the five years shown in the PC-FINPACK spreadsheet. In other words, for a specific firm (facility), PC-FINPACK enables its users to simulate balance sheets, income statements, and other data which are in conformity with comparable data for the typical firm in the specific facility's class.

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[1] Prof. Simon Benninga, in the 1990 printing of his book, Numerical Techniques in Finance, revisits J. M. Warren's and J. P. Shelton's December 1971 Journal of Finance article in which they showed that certain balance-sheet relations may be determined from the simultaneous solution of several linear equations. Benninga made the point that, "... in the Warren-Shelton model the firm solves a problem that involves some twenty simultaneous equations in as many unknowns." *(Benninga, 1990, p. 6)*

The basic and essential input data, for PC-FINPACK, are a specific facility's:

- number of hookups designated by user-class,
- rates of annual growth of major activities-and-items, and
- multipliers which are representatives of the major accounting-and-financial (A&F) relationships for specific categories of facilities.

The data on number of hook-ups may be based on physical counts or projected usage. The PC-FINPACK growth rates and A&F multipliers were derived from analyses of the balance sheets and income statements of field-survey-determined categories of many financially sufficient privately- and public-owned water supply and waste water disposal facilities. The PC-FINPACK spreadsheet was designed to accept the manual loading of the input data.

HOW TO USE PC-FINPACK SPREADSHEETS

The input data for PC-FINPACK are contained in one of the spreadsheet files on the computer disks that were provided. First, the user should select the spreadsheet file that meets her/his requirements. Currently, only three population-categories (small, medium, and large) are available. Users must manually select the appropriate file from the disks provided at this time--WatSupA to WatSupRR, based upon size, region, municipal or private, and water supply or waste water disposal categories. The major things to remember are:

- Users should go directly to help-screen A 1.10 and review the default values. Enter the number of hook-ups expected into cells E40-E42, usage per hook-up into cells I40-I42, and rate per 1,000 gallons into cells C45-C47.
- Additional changes can be made to the income statement and balance sheet in column E if the default values are not appropriate. Save your default file under a new file name before changing it.
- Users can view help-screens:

  via the spreadsheet by pressing the Tab-key twice, or pressing the Alt-key and H-key simultaneously. Users should press Shift-key and Tab-key twice to return to column A, and use the page-up or -down keys to find the lines they want.
- Users are advised to telephone Dr. Edward M. Pierce at (305) 472-1048 or (305) 475-7684, if they have problems, or need information on special considerations such as treatment or capital investment multipliers or problems with the model.

HOW TO CHANGE THE DEFAULT MULTIPLIERS

The predominant ratio (76737/19820), located in cell E600 and also known as the critical multiplier, was determined by analysis of several types of water utilities. This ratio is the essential control factor for calculating the "Total Assets" for the first year (cell E148), which is derived from the formula: "(76737/19820) multiplied by Total Operating Revenues in the first year, shown in cell E71. Therefore, "Computed Total Assets" equals 3.87170 multiplied by E71.

The multipliers in the spreadsheets may be changed by retrieving the spreadsheet, locating the cell(s) to be changed in the "LOOK-UP TABLE" at cell address A671 in the spreadsheet, going to cell(s) to be changed, manually making the change(s), and then saving the spreadsheet.

HELP-SCREENS EXCERPTED FROM PC-FINPACK SPREADSHEETS

- 1.7 Multipliers, lines 36, 37: The inflation rate and real growth rate are added to 1.00 to obtain the "relative." The relatives are multiplied together (1+inf)*(1+r) to obtain 1.00 plus your multiplier (cell I37). All default values are operative throughout the spreadsheet and model. You may change an individual multiplier by entering a new value in the multiplier column. Note that all lines reflect inflated values.

Revenue Computations, lines 39-48: Do not change default values. Enter any adjustments in the revised columns for rates, number of customers (Hook-ups), and usage per customer. If a gross revenue figure is all that is available, enter it in cell M45.

Press F9 (Function key F9) and the program will compute all of the forms based upon your revised numbers.

- 1.8 Special Considerations, lines 50-52: Tentative multipliers for special water treatment and unusual plant and equipment requirements (water towers, etc.) are as follows:

Air Stripping	$ 300	per 1,000,000	gallons
GAC Absorption	$ 500	"	"
Direct Filtering	$ 1,000	"	"
Conv Treatment	$ 2,250	"	"
Steam Stripping	$ 850	"	"

Presence of arsenic, barium, selenium, or coliform Bacteria requires special treatment. Contact Mr. Bill Clark at IWR (703) 355-2240.

● 1.8.1 Unusual transportation distances or pumping requirements may increase plant and equipment costs, as well as operating costs. No data are available to provide adjustments for these conditions at the present time.

Item	Norm	Multiplier	Remarks
Pipelines			
Canals			
Water Towers			
Distribution Net			
EPA Modifications			

● 1.9 Financing Costs, lines 55-59: Financing costs are carried to the weighted cost of capital (WCC) section (line 422). Default values are 10% cost of debt (BT), 9% cost of preferred stock, and 11.6% cost of equity (Beta of 0.80, Rm of 0.13, and RFR of 0.6). The WCC is used to compute present values (line 412) and uniform annual equivalent cost (line 416).

● 2.1 Revenues, lines 64-69: Revenues are computed for the first year using inputs for usage per customer, number of customers (Hook-Ups), and rate per 1,000 gallons. For large systems, numbers of gallons are divided by 1,000,000. Revenues are summed by component to arrive at totals, and are multiplied by the multiplier to obtain revenues for three future years. Revenues are multiplied by the multiplier raised to the sixth power to arrive at revenues in the tenth year.

● 2.2 Expenses, lines 73-83: Operating Expenses increase by use of the multiplier, and are considered as variable expenses. The so-called "fixed expenses" are not tied to operating levels, but are 3$ likely to vary from year to year. The model does not increase fixed expenses over time, but you may increase them by changing the multiplier. The model aggregates fixed expenses, but you may enter values for each expense-category, separately. Neither depreciation nor amortization are increased between years; the model assumes depreciation and amortization amounts are reinvested in the capital accounts, so that plant and equipment accounts remain constant over the years. You may change the entries on lines 140-143 if you have better fore- casts for new construction and major maintenance. Liabilities and retained earnings columns may have to be adjusted.

Operating Earnings are computed by subtracting operating expenses, including depreciation and amortization, from operating revenues.

● 2.3 Non-Operating-Revenues-and-Expenses, -lines 99-104: (Temporary income from restricted assets should be backed out of the income

statement if it is large enough to distort results.) Interest income results from investing normally available assets, to include excess cash. If cash builds up in the model due to excess retained earnings, it is not used to generate additional investment income. You may show additional income on line 99.

Interest expense is obtained by multiplying debt outstanding (cells E155+E156, E170, and E171) by current interest rate (cells E55-E59).

- 2.4 Net Profit and Retained Earnings: Earnings are summed, tax rate (40% in cell C108) is applied, and profit after tax is computed.

Dividends and adjustments are subtracted and retained earnings are posted to the next year's balance sheet (cell G176).

- 3.1 Current Assets, lines 123-131: Cash line is carried forward from line 400 (Cash, End of Year) of the current year. Other lines for the first year are computed by multiplying the total asset figure (cell E148) by the default fraction. Follow-on years are computed by multi- plying the current year value by the multiplier. First year values may be adjusted to reflect your experience by first adjusting the total asset figure, and by second recalculating the decimal multiplier for each line item of the balance sheet. These should sum to 1.0. Third, enter cells E124-E146 of the asset side of the balance sheet and change the fraction used to multiply cell E148. Check your results against the normalized balance sheet.

- 3.2 Restricted Assets, lines 133-137: Restricted assets include monies committed for special purposes such as expanded facilities. The default values include a normal amount of such monies. Theoretically, restricted funds should be cleansed from the income statement and the balance sheet before the financial analysis is completed. If restricted assets are more than 5 to 10% percent of total assets, we recommend that their effect be subtracted from both the balance sheet (lines 133-137) and income statement (line 99).

- 3.3 Fixed Assets, lines 139-145: Fixed assets are held constant through the out-years, assuming that depreciation and amortization are reinvested in plant and equipment. This assumption has the effect of zeroing out the depreciation line and amortization lines. The multiplier is held at 1.00 for fixed assets.

Construction in progress is considered as financed from restricted assets, and is backed out of both assets and liabilities. Note that current depreciation and amortization are being reinvested, and recorded under plant and equipment (line 140).

● 3.4 Total Assets, line 148: The total asset line is a key line in that other assets are computed as a percentage of total assets. The ratio of assets to revenues is computed for the average utility of your size and type. Your revenues (computed according to your number of customers, your usage per customer, and your rates) are multiplied by the ratio of assets to revenues (about 3.8) to obtain the total asset value in cell E148.

Line 149, shows the difference between assets and liabilities plus net worth. On line 150, the asset lines in the balance sheet are totaled to provide a check against the computed asset value. If the multipliers add to one, line 150 should be within one percent of line 148. Differences should be less than two percent, except for column M, which is a rough approximation for a six-year interval.

Asset totals for the out-years are simply the total of all assets, as in any balance sheet. Line 149 is the difference between assets and liabilities, and provides a check of the internal consistency of the program as it is applied to your situation. If errors exceed five percent, consult the trouble shooting section of the manual or call 305-472-1048, Dr. Edward Pierce.

● 3.5 Current Liabilities, lines 152-160: Current liabilities for the first year are computed as a fraction of total assets. The multiplier is used to obtain out-year values except for the current portion of long-term debt, which is computed by multiplying the remaining debt by the first year percentage. You may prefer to hold this number constant by using a 1.0 multiplier. Note that a reduction in debt is a negative cash flow (line 384). Increases in liabilities have the effect of positive cash flows--both will affect the cash account.

Payable from Restricted Assets, line 162-164: These lines are normally zeroed out, but may be used if you include restricted assets in the balance sheet and income statement.

Advances from Other Funds, line 167: Use if you have liabilities due to advance payments from other funds.

● 3.6 Long-Term Liabilities, lines 169-171: Intermediate-term and long-term debt are computed for the first year as a fraction of total assets (line E148). The out-year figures are the first year figures less the previous year's current portion, long-term debt (line 156).

● 3.7 Equity, lines 172-178: Preferred stock, common stock, paid in surplus and retained earnings make up the equity accounts in the business firm. Preferred stock is considered equity by law, and dividends are paid after income is taxed--as opposed to debt where

interest is paid before income is taxed. Preferred dividends are fixed for the life of the stock, and are deducted from net income (line 218).

Common stock, paid in surplus, and retained earnings are all treated as one account in computing cost of equity. The municipality is paid dividends on contributed capital (equity) which is equivalent to common stock plus paid-in-surplus. Dividends grow as equity grows. Equity is totaled, and liabilities and equity are added together to arrive at line 180, which should equal line 148 if the balance is to balance. In this model, we do not attempt to force this balance, but we note instead the differences between assets and liabilities (line 149) to obtain a check on the model's internal consistency.

- 4.1 Normalized Income Statement, lines 184-223: Normalized income statements are developed by dividing each line by total revenues. The decimals should be the multipliers used to generate your first year income statement (decimal multiplied by E71). Column F, line 202, contains the total of the expense column decimals. This total plus the operating earnings (E204) should equal 1.000.

Non-Operating revenues are computed in the same manner, but are not additive to the totals. Interest income is shown as a negative cash inflow.

Profits after tax, dividends, and adjustments complete the normalized income statement.

- 4.2 Normalized Balance Sheet, lines 242-300: Each line of the balance sheet is divided by total assets to obtain the decimals. The asset lines are summed, and should total to 1.000 (line 257). Errors of less than 0.02 in column M are considered acceptable.

Liabilities and equity accounts are computed in the same manner, and should total to 1.000 (line 300). Again, errors of less than two percent in column M are considered acceptable.

- 4.3 Liquidity Ratios, lines 304-309: Liquidity ratios tell us our ability to pay our current bills. The most stringent is the acid test ratio, which contains only cash and short-term securities (near-cash) in the numerator, and current liabilities in the denominator. An adequate ratio is 0.10 for a large firm, 0.50 for a small firm. Liquidity in the sample firm increases as the cash account grows.

Quick ratios include receivables in the numerator, and current ratios include all current assets in the numerator. As a rule-of-thumb, the quick ratio should be about 1 to 1, and the current ratio about 2 to 1, may be lower for utilities.

● 4.4 Activity Ratios, lines 312-322: Activity ratios look at the turnovers of accounts receivable and inventory (lines 312, 314). Days outstanding refers to receivables and tells us the length of time needed to collect the average account receivable. Thirty to forty-five days would appear to be adequate.

Asset turnover is an indication of the efficient use of assets. Although the normal for a manufacturing concern is about 1-to-1, utilities are heavy in assets, and have correspondingly low turn overs. Our averages are from 0.16 to 0.30. The 1.000/asset turnover is the key multiplier used to obtain total assets in cell E148.

A number of special ratios are computed in the industry. Additional ratios may be added on lines 461 to 500.

● 4.5 Coverage Ratios, lines 317-320: Coverage ratios tell us how well protected our interest and other fixed payments are secured, or covered. Interest coverage is computed by adding interest paid to earnings before taxes, and dividing the result by interest paid. Coverage should be twice interest, as a minimum.

Interest and dividend coverage is an indication of how well our dividends are covered. Dividends are paid after taxes, and must be corrected to a before tax figure by dividing the total by (1.000 minus the tax rate).

Fixed finance payment coverage is computed the same way, and should include principal payments on debt (corrected for taxes) and other fixed finance charges (long-term leases) if data are available.

● 4.6 Leverage Ratios, lines 321,322: Leverage ratios developed by dividing debt by total assets, or debt by equity. If a firm is well into the black on its income statement, it can increase its return on equity by increasing its debt ratio. The trade-off is that the firm takes on a higher risk that it will not be able to pay the increased interest and other fixed financing charges in the future.

Utilities, such as water supply and waste water treatment plants typically have high debt to equity ratios since their income is fixed, and there is little danger that they will not be able to meet these financial obligations.

Even privatized utilities are able to carry relatively high debt ratios.

● 4.7 Profitability, lines 324-328: Profitability measures include margin, or net profit over revenues, return on assets, and return on equity. The equity in a municipally-owned firm is imputed as the contributed capital plus retained earnings.

The guidelines for return on equity may be computed by using the formula shown on line 434 (default value of 0.116). This equity return is averaged with debt interest rates using a weighted average technique. Firms that earn this overall rate of return are able to pay interest on their debt and also reward equity holders with dividends. In the model, dividends provide about 40 percent of stockholder return, and growth is expected to provide about 60 percent. Firms that earn this target rate of return will show a zero net present value for cash flows when the weighted cost of capital is used as a discount factor; the internal rate of return will equal the WCC (cell G429).

Municipalities may be subsidizing the utility if the NPV is negative, and may be subsidizing other operations if the NPV is positive.

- 4.8 Growth ratios, lines 330-334: Two factors influence growth of revenues, real growth in operations, and inflation. Real growth increases at about two percent for a mature utility, and the default value for inflation is 3 percent. See help frame 1.9 for the computations to integrate thee values into the model.

Cash flow, earnings, and dividend growth are geometric averages of the growth over the ten year period.

- 4.9 Operating Statistics, lines 337-338: Data on operating statistics are not available at this time.

- 5.1 Operating Cash Flows, lines 364-367: Money received from customers is taken from line 71; cash payments from line 93 after, adding back depreciation and amortization.

An increase in current asses (less cash in this case) or a decrease in current liabilities is a use of cash (lines 369, 370). Tax payments are also negative cash flows and are deleted from operating cash flows, to give a net operating cash flow (line 372).

- 5.2 Other Cash Flows, lines 374-394: Cash flows from non-capital accounts are netted out, with "advances to" as negative and "payments from" as positive.

The retirement of long-term (LT) debt is a negative cash flow, and may include payments out of restricted assets.

Interest on LT debt and dividends are negative cash flows, but may be offset by investment interest. Purchases of securities is a negative cash flow if the securities are listed as an increase in another asset account; sales of securities is a positive cash flow.

- 5.3 Summary of Cash Flows, lines 396-400: Net cash flow is the algebraic sum of lines 372, 378, 390, 393, and 394. Net cash flow is added to cash available at the beginning of the year to obtain cash available at the end of the year. This value should be carried up to the balance sheet for the year as the cash balance.

- 6.1 Payback, lines 403-406: Payback computations are based upon net cash flow (line 396), lagged one year, subtracted from original capital invested (debt plus equity).

Payback is very slow for most utilities due to the heavy investment and regulated environment that limits returns; thus, payback is not a good measure of performance for utilities.

We have artificially assumed an infinite life, and amortized the cash flows beyond year ten at the cost of capital (cell G429) to show that payback of all capital does occur (as signified by the negative number in cell K406). On the average, over two-thirds of the investment is paid back at the end of year ten (K406/F404).

The second payback computation is based upon payback of contributed capital (equity), as is normal in financial analysis.

- 6.2 Internal Rate of Return, lines 409, 410: The amortized value of cash flows for years ten and beyond are included in cell K409 to arrive at a fair IRR based upon equity investment.

This internal rate of return is on original equity (contributed capital).

- 6.3 Net Present Value, lines 413-415: The net present value calculations are provided for both equity and total investments, and represent the values of the cash flows the utility will generate, discounted at the cost of equity (cell D427) less the original equity investment (cell E175).

A positive net present value would indicate a potential for privatization of the utility.

Uniform equivalent cost is computed by using the total capital invested (all debt plus equity). This figure is divided by the present value of an annuity figure for the weighted cost of capital figure. (We used the closest approximation available from our present value tables.)

- 7.1 Cost of Components, lines 424-428: Cost of debt is the current cost of borrowing when considering new investments. For a municipal, that cost would be the interest paid on a bond issue,

adjusted for issuing expenses. We assume that the bonds would be tax-free. The after tax default value for both municipalities and firms is 0.06 since municipal interest is not subject to federal tax, but interest on private debt must be adjusted for the federal tax effect; thus, multiply interest rate by (1.0 minus tax rate).

Cost of preferred stock is the dividend paid divided by the issue proceeds. We have assumed a $9 dividend and issue proceeds of $100.

Cost of equity is computed using a financial formula based upon the capital asset pricing model. An alternative approach, which assumes a constant growth pattern, gives a much smaller required return on equity. The conservative approach was taken, giving a default value of 11.6 percent.

- 7.2 Weighted Average Costs, lines 424-427: We have used the book values of debt and equity for the first year to determine market values of the components. Proportions are the value of each component divided by the total value of all components.

The After Tax Cost of each component is multiplied by that component's proportion to obtain a weighted cost for the component.

The weighted cost of each component is summed to provide a Weighted Cost of Capital (WCC). The default value varies, but is approximately 8 percent. This value, the WCC, is used as the discount value when computing net present value of the firm, debt plus equity.

* - - - * - - - * - - - * - - - * - - - * - - - * - - - * - - - *

A sample copy of a PC-FINPACK generated spreadsheet is on the next page.

We hope PC-FINPACK proves to be helpful in your financial analysis of water-supply and -disposal facilities and, perhaps, other kinds of projects when appropriate multipliers become available.

* - - - * - - - * - - - * - - - * - - - * - - - * - - - * - - - *

SAMPLE PC-FINPACK SPREADSHEET

.rj(right)(right)(right)(right)(right)(right)- .ppr(?)- WatSupD (Medium, West)
omr132-os\015-qgpqS 3.IWR

Data Base A: Private Water Supply, 19XX - 19XX+10
MEDIUM, WEST

	6		NOTES: Column D will be deleted in final worksheet. Currently, we have small, medium, and large population-categories.
	7		
A 1.6	8		
Type of Project	9		Users must manually select the appropriate file from the disks provided at this time--WatSupA to WatSupRR, based upon size, region, municipal or private, and water supply or waste water disposal categories.
Municipal Water Supply	10		
Municipal Waste Water Disposal			
Private Water Supply	12	XXX	
Private Waste Water Disposal			
	14		Go directly to help-screen A 1.10 and review the default values. Enter the number of hook-ups expected into cells E40-E42, usage per hook-up into cells I40-I42, and rate per 1,000 gallons into cells C45-C47.
Population	15		
Less than 500	16		
501 to 3,300	17	XXX	Additional changes can be made to the income statement and balance sheet in column E if the default values are not appropriate. Save your default file under a new file name before changing it.
3,301 to 25,000	18		
25001 to 50,000	19		
Greater than 50,000	20		
	21		You can view help-screens by pressing Tab-key twice, or pressing Alt-key and H-key simultaneously. Press Shift-key and Tab-key twice to return to column A. You may have to page up or down to find the lines you want.
Region:	22		
East	23		
Middle	24		
West	25	XXX	Telephone Dr. Edward M. Pierce at (305) 472-1048 or (305) 475-7684, if you have problems, or need information on special considerations such as treatment or capital investment multipliers or problems with the model. Data base questions should be referred to Dr. G. Richard Dreese, (614) 251-4566. Model-access and programming questions should be referred to Mr. Bill Clark, Engineer Institute for Water Resources, (703) 355-2240.
	26		
A 1.7	27		
Source of Water Supply	28		
Surface	29		
Well	30	XXX	
Other	31		
	32		
A 1.10	33		

The default values for this project will be based upon:

		35		Revised					
Inflation rate		36	0.000						
Usage growth rate		37	0.050	Your multiplier is		1.050			
		38		NUMBER OF HOOK-UPS			(3.5 people per hook-up, gallons in 000s.)		
USAGE PER HOOK-UP	Default	39	Revised	Default	Revised		Total Usage		
Residential	136.1	40	136.1	39958	39958		5436646		
Commercial	592.0	41	592.0	4251	4251		2516498		
Industrial	11881.0	42	11881.0	21	21		249500		
		43		Revenue per customer			Revenue:		
RATE PER 1,000 GAL.	Default	44	Revised	Default	Revised		Default	Revised	
Residential	2.320	45	2.320	315.7	315.7		12613	12613	0.725
Commercial	1.710	46	1.710	1012.3	1012.3		4303	4303	0.248
Industrial	1.880	47		22336.2	22336.2		469	469	0.027
Weighted Average	2.157	48							
A 1.11		49						17385.3	1.000
Special Considerations:		50							
Treatment cost multiplier		51	See line 81, help screen.						
Supplemental capital investm		52	"						
		53							
Financing costs:		54	Default	Revised					
Short-term debt		55	0.100	0.100					
Intermediate-term debt		56	0.100	0.100					
Long-term debt		57	0.100	0.100					
Preferred Stock		58	0.090	0.090					
Equity		59	0.116	0.116					
		60							

INCOME AND EXPENSES, PRIVATE WATER SUPPLY, MEDIUM, WEST (Dollars in thousands)

		62		One +							Multiplier to 6th power			
OPERATING REVENUES		63	1992	Multiplie	1993		1994		1995			2001	REFERENCE
Residential		64	12613.0	1.050	13243.7	1.050	13905.9	1.050	14601.1	1.340		19566.9	+k45
Commercial		65	4303.2	1.050	4518.4	1.050	4744.3	1.050	4981.5	1.340		6675.7	k46
Industrial		66	469.1	1.050	492.5	1.050	517.1	1.050	543.0	1.340		727.7	k47
Heavy Industrial		67		1.050	0.0	1.050	0.0	1.050	0.0	1.340		0.0	
Less bad accounts		68	0.0	1.050	0.0	1.050	0.0	1.050	0.0	1.340		0.0	
Other Operating Income		69	0.0	1.050	0.0	1.050	0.0	1.050	0.0	1.340		0.0	
		70											
Total Oper. Rev.,1st Yr.		71	17385.3	1.050	18254.6	1.050	19167.3	1.050	20125.6	1.340		26970.3	Summed
		72											
OPERATING EXPENSES		73											
		74											
Employee Salaries	0.000	75	0.0		0.0		0.0		0.0			0.0	
Soc. Sec. Benefits	0.000	76	0.0		0.0		0.0		0.0			0.0	
Fringe Benefits	0.000	77	0.0		0.0		0.0		0.0			0.0	
Heat-Light-Power	0.000	78	0.0		0.0		0.0		0.0			0.0	
Supplies-Materials	0.000	79	0.0		0.0		0.0		0.0			0.0	
Maintenance	0.000	80	0.0		0.0		0.0-		0.0			0.0	% of sal
Other	0.722	81	8466.6	1.050	8890.0	1.050	9334.5	1.050	9801.2	1.340		13134.5	e71*.567
		82											
VARIABLE EXPENSES	0.722	83	8466.6	1.050	8890.0	1.050	9334.5	1.050	9801.2	1.340		13134.5	Summed
		84											
Amortization	0.000	85	0.0		0.0		0.0		0.0			0.0	Capacity
Depreciation	0.111	86	1303.9	1.000	1303.9	1.000	1303.9	1.000	1303.9	1.000		1303.9	adequate
Insurance	0.000	87	0.0		0.0		0.0		0.0			0.0	e71*.087
Professional Fees	0.000	88	0.0		0.0		0.0		0.0			0.0	
Other (Taxes)	0.167	89	1954.1	1.000	1954.1	1.000	1954.1	1.000	1954.1	1.55		3031.5	Increased
		90											
FIXED EXPENSES	0.278	91	3258.0	1.000	3258.0	1.000	3258.0	1.000	3258.0	1.331		4335.4	Summed
		92											
TOTAL OPER.EXPENSES	1.000	93	11724.6	1.036	12148.0	1.037	12592.5	1.037	13059.2	1.338		17469.9	e83+e91

		94	=========		=========		=========		=========		=========			
OPERATING EARNINGS (LOSSES)		95	5660.7	1.079	6106.6	1.077	6574.8	1.075	7066.5	1.344	9500.4	e71-e93		
		96												
NON-OPERATING REVENUES (EXPENSES)														
		98												
Interest Income		99	0.0		0.0		0.0		0.0		0.0			
Other Income		100	0.0		0.0		0.0		0.0		0.0			
Sale Fixed assets		101	0.0		0.0		0.0		0.0		0.0			
Interest Expense	0.096	102	-3695.4		-3695.4		-3695.4		-3695.4		-3695.4			
Other		103	0.0		0.0		0.0		0.0		0.0			
		104												
NET NON-OPERATING EARNINGS		105	-3695.4		-3695.4		-3695.4		-3695.4		-3695.4	Debt inte		
		106										when disc		
NET EARNINGS		107	1965.3		2411.2		2879.5	1.171	3371.1	1.722	5805.0			
Tax	0.400 0.045	108	786.1	1.000	964.5	1.000	1151.8		1348.4		2322.0	e71*.136		
		109	=========		=========		=========		=========		=========			
PROFIT AFTER TAX	0.068	110	1179.2		1446.7		1727.7		2022.7		3483.0			
Preferred Stock Dividends		111	-76.7		-76.7		-76.7		-76.7		-76.7	Not meani		
Common Dividends		112	-471.7		-578.7		-691.1		-809.1		-1393.2	e110*.04		
Adjustments		113	0.0		0.0		0.0		0.0		0.0			
Total to Retained Earnings		114	630.8		791.3		959.9		1136.9		2013.1	Summed		
	3.209	115												
CASH COMPUTATIONS		116												
Cash BOY (Begin. of Yr.)		117	2557.8	1.053	2692.4	1.050	2827.0	1.050	2968.4	1.340	3977.9			
Cash EOY (End of Yr.)		118	2692.4		2827.0		2968.4		3116.8		4176.8			
Cash Avail. for Withdrawal		119	67.3		121.2		127.2		133.6		179.0			
		120												
BALANCE SHEET, PRIVATE WATER SUPPLY, MEDIUM, WEST (Dollars in thousands)														
		122												
CURRENT ASSETS		123	1992		1993		1994		1995		2001	REFERENCE		
Cash (Line 118)	0.040	124	2692.4	1.050	2827.0	1.050	2968.4	1.050	3116.8	1.340	4176.8			
Accounts Receivable		125	16.4		1.0		1.0		1.0		1.0			
Due From Other Funds		126	0.0		0.0		0.0		0.0		0.0	AR dummy		
Due from Other Governments		127	0.0		0.0		0.0		0.0		0.0			
Inventory, at cost		128	16.4		1.0		1.0		1.0		1.0			
Other CA	0.032	129	2147.9	1.050	2255.3	1.050	2368.0	1.050	2486.4	1.340	3332.1	+e148*.1		
		130												
Total, Curr. Asset	0.072	131	4873.2		5084.3		5338.4		5605.3		7510.9	Summed		
		132												
RESTRICTED ASSETS		133												
Investments		134	0.0		0.0		0.0		0.0		0.0			
AR--Contributed Capital		135	0.0		0.0		0.0		0.0		0.0			
		136												
Tot. Rest. Assets	0.000	137	0.0		0.0		0.0		0.0		0.0			
		138												
FIXED ASSETS		139												
Plant & Equipment		140	55531.3		55531.3		55531.3		55531.3		55531.3	e148*.80		
Less Depreciation		141	0.0		0.0		0.0		0.0		0.0	Assume r		
Land		142	0.0		0.0		0.0		0.0		0.0	depreciat		
Construction In Progress		143	0.0		0.0		0.0		0.0		0.0	support g		
		144												
Tot. Fixed Assets	0.825	145	55531.3		55531.3		55531.3		55531.3		55531.3	Summed		
Other Assets	0.103	146	6906.2	1.050	7251.5	1.050	7614.0	1.050	7994.7	1.340	10713.7	Add amort		
		147	=========		=========		=========		=========		=========	e148*.09		
COMPUTED TOT. ASSETS-1ST YR		148	67310.6		67867.1		68483.8		69131.3		73755.9	(Assets/R		
ASSETS MINUS LIABILITIES		149	0.0		-0.0		0.0		0.0		0.0	Assets -		
SUM OF ASSET-ELEMENTS-CHECK		150	67310.6		67867.1		68483.8		69131.3		73755.9			
LIABILITIES AND EQUITY		151												
CURRENT LIABILITIES		152										Page		
Accounts Payable		153	0.0		0.0		0.0		0.0		0.0			
Accrued Expenses		154	0.0		0.0		0.0		0.0		0.0			
Short Term Debt		155	0.0		0.0		0.0		0.0		0.0			
Current Part. LT Debt		156	0.0		0.0		0.0		0.0		0.0			
Due to Other Funds		157	0.0		0.0		0.0		0.0		0.0			
Other	0.099	158	6638.8	1.050	6403.9	1.050	6060.7	1.050	5571.4	1.340	8182.9			
		159												
Total Curr. Liabilities		160	6638.8		6403.9		6060.7		5571.4		8182.9	Summed		
PAYABLE FROM RESTRICTED ASSETS														
Contracts Payable		162	0.0		0.0		0.0		0.0		0.0			
Deposits		163	0.0		0.0		0.0		0.0		0.0			
		164												
Total, Payable from R.A.		165	0.0		0.0		0.0		0.0		0.0			
		166												
ADVANCES FROM OTHER FUNDS		167	0.0		0.0		0.0		0.0		0.0			
		168										Adjust to		
LONG TERM LIABILITIES		169										schedule		
Intermediate-Term De	0.236	170	15885.3		15885.3		15885.3		15885.3		15885.3	e148*.17		
Long Term Debt	0.313	171	21068.2		21068.2		21068.2		21068.2		21068.2	e148*.35		
EQUITY		172												
Preferred Stock	0.019	173	1278.9		1278.9		1278.9		1278.9		1278.9	e148*.00		
Common Stock	0.324	174	21808.6		21808.6		21808.6		21808.6		21808.6	e148*.36		
Contributed Capital	0.000	175	0.0		0.0		0.0		0.0	Not corre	0.0			
Retained Earnings	0.009	176	530.8		1422.1		2382.0		3518.8	Have 5 ye	5531.9	0 Begin o		
		177										/3)*		
Total Equity	0.352	178	23718.3		24509.6		25469.5		26606.4		28619.4	Summed		
		179	=========		=========		=========		=========		=========			
Total Liabil. & Equity		180	67310.6		67867.1		68483.8		69131.3		73755.9	RE summed		
		181										for 96 to		
	1.000	182												
NORMALIZED INCOME STATEMENTS, PRIVATE WATER SUPLY, MEDIUM, WEST														
		184	1992		1993		1994		1995		2001	REFERENCE		
OPERATING REVENUES		185												
Service Charges		186	1.000		1.000		1.000		1.000		1.000	Base for		

Other Operating Income	187	0.000	0.000	0.000	0.000	0.000	expenses
	188						
OPERATING EXPENSES	189						
Employee Salaries	190	0.000	0.000	0.000	0.000	0.000	
Soc. Sec. Benefits	191	0.000	0.000	0.000	0.000	0.000	
Fringe Benefits	192	0.000	0.000	0.000	0.000	0.000	
Heat-Light-Power	193	0.000	0.000	0.000	0.000	0.000	
Supplies, Materials	194	0.000	0.000	0.000	0.000	0.000	
Maintenance	195	0.000	0.000	0.000	0.000	0.000	
Other	196	0.722	0.732	0.741	0.751	0.752	
FIXED EXPENSES	197						
Amortization	198	0.000	0.000	0.000	0.000	0.000	
Depreciation	199	0.111	0.107	0.104	0.100	0.075	
Insurance	200	0.000	0.000	0.000	0.000	0.000	
Professional Fees	201	0.000	0.000	0.000	0.000	0.000	
Other	202	0.167	0.161	0.155	0.150	0.174	
	203	=========	=========	=========	=========	=========	
OPERATING EARNINGS (LOSSES)	204	0.326	0.335	0.343	0.351	0.352	
	205						
NON-OPERATING REVENUES (EXPENSES)							
	207						
Interest Income	208	0.000	0.000	0.000	0.000	0.000	
Other Income	209	0.000	0.000	0.000	0.000	0.000	
Sale Fixed assets	210	0.000	0.000	0.000	0.000	0.000	
Interest Expense	211	-0.213	-0.202	-0.193	-0.184	-0.137	
Other	212	0.000	0.000	0.000	0.000	0.000	
	213						
NET NON-OPERATING EARNINGS	214						
Tax	215	0.045	0.053	0.060	0.067	0.086	
	216	=========	=========	=========	=========	=========	
PROFIT AFTER TAX (%Reven)	217	0.068	0.079	0.090	0.101	0.129	
Preferred Stock Dividends	218	0.004	0.004	-0.004	-0.004	-0.003	
Common Dividends	219	0.027	0.032	0.036	0.040	0.052	
Adjustments	220	0.000	0.000	0.000	0.000	0.000	
To Retained Earnings	221	0.036	0.043	0.050	0.056	0.075	
	222						
	223						
	224						
	225						
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	237						
	238						
	239						
	240						
NORMALIZED BALANCE SHEET, PRIVATE WATER SUPPLY, MEDIUM, WEST							
	242						
CURRENT ASSETS	243	1992	1993	1994	1995	2001	REFERENCE
Cash (E400, 1st Year)	244	0.040	0.042	0.043	0.045	0.057	
Accounts Receivable	245	0.000	0.000	0.000	0.000	0.000	
Due From Other Funds	246	0.000	0.000	0.000	0.000	0.000	
Due fromDue Other Funds	247	0.000	0.000	0.000	0.000	0.000	
Inventory, at cost	248	0.000	0.000	0.000	0.000	0.000	
Prepaid Expenses	249	0.032	0.033	0.035	0.036	0.045	
	250						
Total, Current Assets	251	0.072	0.075	0.078	0.081	0.102	Summed
	252						
RESTRICTED ASSETS	253						
Investments	254	0.000	0.000	0.000	0.000	0.000	
AR--Contributed Capital	255	0.000	0.000	0.000	0.000	0.000	
	256						
Total, Restricted Assets	257	0.000	0.000	0.000	0.000	0.000	summed
	258						
FIXED ASSETS	259						
P&E	260	0.825	0.818	0.811	0.803	0.753	
Less Depreciation	261	0.000	0.000	0.000	0.000	0.000	
Land	262	0.000	0.000	0.000	0.000	0.000	
Construction In Progress	263	0.000	0.000	0.000	0.000	0.000	
	264						
Total, Fixed Assets	265	0.825	0.818	0.811	0.803	0.753	Summed
Other Assets	266	0.103	0.107	0.111	0.116	0.145	
	267	=========	=========	=========	=========	=========	
Total Assets	268	1.000	1.000	1.000	1.000	1.000	Summed +M251+M25
	269						
LIABILITIES AND EQUITY	270						
	271						
CURRENT LIABILITIES	272						
Accounts Payable	273	0.00	0.00	0.00	0.00	0.00	
Accrued Expenses	274	0.00	0.00	0.00	0.00	0.00	
Short Term Debt	275	0.00	0.00	0.00	0.00	0.00	
Current Part, LT Debt	276	0.00	0.00	0.00	0.00	0.00	
Due to Other Funds	277	0.00	0.00	0.00	0.00	0.00	
Other	278	0.10	0.09	0.09	0.08	0.11	+N158/NS
	279						

Total Curr. Liabilities	280	0.10	0.09	0.09	0.08	0.11	
PAYABLE FROM RESTRICTED ASSETS							
Contracts Payable	282	0.00	0.00	0.00	0.00	0.00	
Deposits	283	0.00	0.00	0.00	0.00	0.00	
	284						
Total, Payable from R.A.	285	0.00	0.00	0.00	0.00	0.00	
	286						
ADVANCES FROM OTHER FUNDS	287	0.00	0.00	0.00	0.00	0.00	
	288						
LONG TERM LIABILITIES	289						
Intermediate-Term Debt	290	0.24	0.23	0.23	0.23	0.22	
Long-Term Debt	291	0.31	0.31	0.31	0.30	0.29	
EQUITY	292						
Preferred Stock	293	0.02	0.02	0.02	0.02	0.02	
Common Stock	294	0.32	0.32	0.32	0.32	0.30	
Contributed Capital	295	0.00	0.00	0.00	0.00	0.00	
Retained Earnings	296	0.01	0.02	0.03	0.05	0.08	
	297						
Total Equity	298	0.35	0.36	0.37	0.38	0.39	Summed
	299	=======	=======	=======	=======	=======	
Total Liabilities & Equity	300	1.0	1.0	1.0	1.0	1.0	Summed
	301						
RATIO ANALYSIS, PRIVATE WATER SUPPLY, MEDIUM, WEST							
	303	1992	1993	1994	1995	2001	
LIQUIDITY	304						
Acid Test	305	0.426	0.4	0.5	0.6	0.5	
Quick	306	0.408	0.4	0.5	0.6	0.5	
Current	307	0.734	0.8	0.9	1.0	0.9	
AR/Op Inc	308	0.0	0.0	0.0	0.0	0.0	
	309						Cash/Inve
	310						
ACTIVITY	311						
Accounts Receivable TO	312	17385.3	18254.6	19167.3	20125.6	26970.3	
Days Outstanding	313	0.0	0.0	0.0	0.0	0.0	
Inventory Turnover	314	nm	nm	nm	nm	nm	
Asset Turnover	315	0.258	0.3	0.3	0.3	0.4	
One/Asset TO	316	1.872					
COVERAGE AND LEVERAGE	317						
Interest Coverage	318	1.745	0.7	0.8	0.9	1.6	
Interest + Dividends	319	1.519	0.6	0.6	0.7	1.1	
Fixed Finance Payments	320	1.272	0.6	0.6	0.7	1.1	No curren
L.LT Debt/Assets	321	0.55	0.5	0.5	0.5	0.5	
Equity/Assets	322	0.35	0.4	0.4	0.4	0.4	
	323						(E107+E10
PROFITABILITY	324						formula
Margin	325	0.113	0.5	0.5	0.5	0.5	
Return on Assets	326	0.029	0.0	0.0	0.0	0.1	
Return on Equity	327	0.083	0.1	0.1	0.1	0.2	
Cash Flow on Assets	328	0.103	0.1	0.1	0.1	0.1	
	329						Assets >
GROWTH (Percent)	330						
Revenue	331	0.050	0.050	0.050	0.050	0.050	
Cash Flow	332	na	na	na	na	na	
Earnings	333	na	na	na	na	na	
Dividends	334	na	na	na	na	na	
	335	Note:	((f54-d54)-1)*100				
	336						
OPERATING STATISTICS	337						
Peak Load	338						
Capacity at Peak	339						
	340						
SENSITIVITY ANALYSIS RATES (WEIGHTED AVERAGE)							
	342						
Rates (Weighted Average)	343	2.2	2.2	2.2	2.2	2.2	
Usage	344	8202644	8202644	8202644	8202644	8202644	
Customers	345	44230	44230	44230	44230	44230	
	346						
Revenues	347	17385	18255	19167	20126	26970	Dollars i
	348						
Personnel Costs	349	0	0	0	0	0	not avail
Other Variable Expenses	350	8467	8890	9334	9801	13135	
Depreciat'n & Amortizat'n	351	1304	1304	1304	1304	1304	
Other Fixed Expenses	352	1954	1954	1954	1954	3031	
	353						
Total Assets	354	67311	67867	68484	69131	73756	
Plant and Equipment	355	55531	55531	55531	55531	55531	
(Operating)	356						
Debt (IT and LT)	357	36954	36954	36954	36954	36954	
Equity (Equivalent)	358	23718	24510	25469	26606	28619	
	359						
	360						
STATEMENT OF CASH FLOWS, PRIVATE WATER SUPPLY, MEDIUM, WEST (Dollars in Thousands)							
	362	1992	1993	1994	1995	2001	REFERENC.
CASH FLOWS FROM OPERATING ACTIVITIES							Page
Received from Customers	364	17385.3	18254.6	19167.3	20125.6	26970.3	Summed
Payments	365	-11724.6	-12148.0	-12592.5	-13059.2	-17469.9	-M93
Add Back Depreciation	366	1303.9	1303.9	1303.9	1303.9	1303.9	
Net Operating Cash Flow	367	6964.5	7410.5	7878.7	8370.3	10804.3	@SUM(M364
	368						Incl depr
Change, CA, less cash	369	0.0	76.5	112.8	118.4	845.6	
Change Current Liabilities	370	0.0	-234.9	-343.2	-489.3	-655.8	
Taxes	371	-786.1	-964.5	-1151.8	-1348.4	-1807.0	
Cash Flow, Operat. Accts.	372	6178.4	6287.6	6496.5	6651.0	9187.1	+M367+M36

	373						In year 2
CASH FLOWS FROM NON-CAPITAL FINANCING ACTIVITIES							
Advances to Other Funds	375	0.0	0.0	0.0	0.0	0.0	
Repayment to Other Funds	376	0.0	0.0	0.0	0.0	0.0	
	377						
Total, C.F. From Non-Cap	378	0.0	0.0	0.0	0.0	0.0	+M375+M37
	379						
CASH FLOWS FROM CAPITAL ACCOUNTS							
Change in Fixed Assets	381	0.0	0.0	0.0	0.0	0.0	Assume c
Change in Other Assets	382	0.0	345.3	362.6	380.7	2719.0	for expan
Capital Grants	383	0.0	0.0	0.0	0.0	0.0	minor add
Retirement, LT Debt	384	0.0	0.0	0.0	0.0	0.0	
New debt	385	0.0	0.0	0.0	0.0	0.0	
Interest on LT Debt	386	-3695.4	-3695.4	-3695.4	-3695.4	-3695.4	+M102
Dividends	387	-471.7	-578.7	-691.1	-809.1	-1393.2	e110*.04
Contributed Capital	388	0.0	0.0	0.0	0.0	0.0	Ave RE, 6
Depreciation, Amortization	389	1303.9	1303.9	1303.9	1303.9	1303.9	+M85+M86
Total, C.F. From Cap Accts	390	-2863.1	-2624.8	-2720.0	-2819.8	-1065.7	Summed
	391						
CASH FLOWS FROM INVESTMENTS	392						
Investment Interest	393	0.0	0.0	0.0	0.0	0.0	
Net purchase Securities	394	0.0	0.0	0.0	0.0	0.0	
	395						
NET CASH FLOW	396	3315.3	3662.8	3776.6	3831.2	8121.4	+M372+M37
	397						
CASH, BEGINNING OF YEAR	398	2557.8	2692.4	2827.0	2968.4	3977.9	
CASH, Avail. for Withdrawal	399	67.3	121.2	127.2	133.6	179.0	
CASH, EOY Includes Line 399	400	2692.4	2827.0	2968.4	3116.8	4176.8	
	401						
	402						

PAYBACK Year	403	0	1	2	3	4	5-10	Beyond 10
Investment	404	-67311	67311	59828	51891	43728	35393	-43867.1
Cash Flow to Capital	405		7482	7937	8163	8336	79260	160981
Remaining Investment	406		59828	51891	43728	35393	-43867	-204848
	407							

INTERNAL RATE OF RETURN	408	Assume perpetuity after year ten.						
Cash Flow	409	-67311	7482	7937	8163	8336	79260	160981
IRR	410	0.318						
	411							
NET PRESENT VALUE 0.082	412	Assume perpetuity after year ten.						
Cash Flow	413	-67311	7482	7937	8163	8336	79260	160981
Net Present Value	414	104089.1						
	415							
UNIFORM ANNUAL EQUIVALENT COST								
Costd/PVIFA,coc,infin per		5523.5						
	418							
	419							
	420							
	421							
WEIGHTED COST OF CAPTIAL:	422							

Component	BTC	ATC		Mkt Value	Propor-tion	Cost
			423			
			424			
k dit	0.1	0.060	425	15885	0.3	0.015
k dlt	0.1	0.060	426	21068.2	0.3	0.020
k ps		0.090	427	1279	0.0	0.002
k e		0.116	428	23718	0.4	0.044
			429			
			430	61951	1.0	0.082

k e = D/P + g = .04 + .05 = 0.090
Constant growth assumption.

	433	
k e = RFR + b(R m - RFR) = .06	434	0.116
	435	
	436	

PROJECT SUMMARY: PRIVATE WATER SUPPY, MEDIUM, WEST--base case

	438			
Annual revenues for the first and tenth years are:		17385.3	26970.3	+e71 26970.3
Annual cash expenses for the first and tenth years are:		14902.2	22183.4	+E93-E85-E86-E105+
	441			+M93-M85-M86-M105+
Payback would occur in year:				
Internal rate of return on this project is:		0.318 (Probably a minus .003, but near zero)		+E410
Net present value of this project is:		104089		+E414
	445			
Project cash flow would have to equal		5523 each year to cover costs		+E417

and provide for the market required return on equity. (Nearly double current CF).
(Dollars in thousands)
(Assuming an infinite project life)

	450	
Ratio Analysis:	451	
Liquidity position is		
	453	
Asset turnover is		
	455	
Profitability is		
	457	
	458	
Growth rate is 0.050		
	460	
Excess capacity at peak load is (not available).		
	462	
Assume depreciaton is reinvestd in assets.		
	464	
	465	

466
467
468
ADJUSTED BALANCE SHEET LINES 124 THROUGH 150 FOR FIRST YEAR
470
471 1992
472 ---
CURRENT ASSETS 473
Cash (See line 124) 474 2692.4
Accounts Receivable 475 16.4
Due From Other Funds 476 0.0
Due from Other Governments 477 0.0
Inventory, at Cost 478 16.4
Other CA 0.0319 479 2147.9
480
Total, Current Assets 481 4873.2
482
RESTRICTED ASSETS 483
Investments 484 0.0
AR--Contributed Capital 485 0.0
486
Total, Restricted Assets 487 0.0
488
FIXED ASSETS 489
Plant & Equipment 490 55531.3
Less Depreciation 491 0.0
Land 492 0.0
Construction In Progress 493 0.0
494
Total Fixed Assets 495 55531.3
Other Assets 496 6906.2
497 =======
TOTAL ASSETS, COMPUTED 498 67310.6
Assets-liabilities, 1st year 499 0.0
SUM OF ASSET-ELEMENTS 500 67310.6
501 LINES 503 THROUGH 519 ARE ADJUSTMENTS ROUTINES FOR LIABILITIES

Accounts Payable	503	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Accrued Expenses	504	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Short Term Debt	505	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Current.Part, LT Debt	506	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Due to Other Funds	507	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	508	5990.6	648.1	6290.2	113.7	6604.7	-544.0	6934.9	-1363.5	9293.5	-1110.5
Contracts Payable	509	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deposits	510	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ADVANCES FROM OTHER FUNDS	511	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Intermediate-Term Debt	512	15885.3	0.0	15885.3	0.0	15885.3	0.0	15885.3	0.0	15885.3	0.0
Long Term Debt	513	21068.2	0.0	21068.2	0.0	21068.2	0.0	21068.2	0.0	21068.2	0.0
Preferred Stock	514	1278.9	0.0	1278.9	0.0	1278.9	0.0	1278.9	0.0	1278.9	0.0
Common Stock	515	21808.6	0.0	21808.6	0.0	21808.6	0.0	21808.6	0.0	21808.6	0.0
Contributed Capital	516	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Retained Earnings	517	630.8	0.0	1422.1	0.0	2382.0	0.0	3518.8	0.0	5531.9	0.0
	518										
Total Liabilities & Equity	519	66662.5	648.1	67753.3	113.7	69027.7	-544.0	70494.8	-1363.5	74866.4	-1110.5

520 ---
UNADJUSTED FIRST YEAR BALANCE SHEET LINES 124 THROUGH 150 --- SEE LINES 474 THROUGH 500
522 1992
523 ---
CURRENT ASSETS
Cash (See line 124) 524 2692.4
Accounts Receivable 525 16.8
Due From Other Funds 526 0.0
Due from Other Governments 527 0.0
Inventory, at Cost 528 16.8
Other CA 0.0319 529 2198.1
530
Total, Current Assets 531 4924.2
532
RESTRICTED ASSETS 533
Investments 534 0.0
AR--Contributed Capital 535 0.0
536
Total, Restricted Assets 537 0.0
538
FIXED ASSETS 539
Plant & Equipment 540 55531.3
Less Depreciation 541 0.0
Land 542 0.0
Construction In Progress 543 0.0
544
Total Fixed Assets 545 55531.3
Other Assets 546 7067.6
547 =======
TOTAL ASSETS, COMPUTED 548 67310.6
Assets-liabilities, 1st year 549 0.0
SUM OF ASSET-ELEMENTS 550 67523.1

****
*** TO QUICKLY FIND MULTIPLIER CELLS SEE LOOK-UP TABLE AT A671. ***
****

CELL E600--THE PREDOMINANT MULTIPLIER

In the first year, the ratio 76737/19820 is equivalent to ("Total Assets" divided by "Total Operating Revenues"). This ratio, which

equals 3.87170 and is known as the predominant multiplier, was determined by analysis of several types of water utilities. In the first year, this ratio (E600) is multiplied by "Total Operating Revenues" (E71) to produce "Computed Total Assets" (E148).

DESCRIPTIONS OF THE OPERATIONS OF MULTIPLIERS ARE IN SAME ROW WITH THE ACTUAL MULTIPLIERS.		Col. E Multiplier	Description of Multiplier's Operation
SUPPLIES & MATERIALS	568	0.00000 = E568	Computes "Supplies & Materials--Operating Expenses" (E79),
	569		when multiplied by "Total Operating Revenues" (E71).
MAINTENANCE--OPER. EXP.	570	0.00000 = E570	Computes "Maintenance--Operating Expenses" (E80),
	571		when multiplied by "Total Operating Revenues" (E71).
OTHER--OPER. EXPENSES	572	0.48700 = E572	Computes "Other--OperATING Expenses" (E81),
	573		when multiplied by "Total Operating Revenues" (E71).
DEPRECIATION--VAR. EXP.	574	0.07500 = E574	Computes "Depreciation--Variable Expenses" (E86),
	575		when multiplied by "Total Operating Revenues" (E71).
INSURANCE--VAR. EXP.	576	0.00000 = E576	Computes "Insurance--Variable Expenses" (E87),
	577		when multiplied by "Total Operating Revenues" (E71).
PROFESSIONAL FEES--VAR. EXP.	578	0.00000 = E578	Computes "Professional Fees--Variable Expenses" (E88),
	579		when multiplied by "Total Operating Revenues" (E71).
OTHER (TAXES)--VAR. EXP.	580	0.11240 = E580	Computes "Other (Taxes)--Variable Expenses" (E89),
	581		when multiplied by "Total Operating Revenues" (E71).
OTHER ASSETS	582	0.10500 = E582	Computes "Other Assets" (E546),
	583		when multiplied by "Computed Total Assets" (E148).
CASH, END OF YEAR	584	0.04000 = E584	Computes "Cash, End of Year" (E118),
	585		when multiplied by "Computed Total Assets" (E148).
CASH, AVAIL. FOR WITHDRAWAL	586	0.90000 = E586	Computes "Cash, Available for Withdrawal" (E119), when multiplied
	587		by "Cash, End-Of-Year" (E118) minus "Cash, Beginning-Of-Year" (E117).
	588		
	589		
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	591		
EMPLOYEE SALARIES--OPER. EXP.	592	0.00000 = E592	Computes "Employee Salaries--Operating Expenses" (E75),
	593		when multiplied by "Total Operating Revenues" (E71).
SOC. SECURITY BENEFITS	594	0.00000 = E594	Computes "Social Security Benefits--Operating Expenses" (E76),
	595		when multiplied by "Total Operating Revenues" (E71).
FRINGE BENFITS--OPER. EXP.	596	0.00000 = E596	Computes "Fringe Benefits--Operating Expenses" (E77),
	597		when multiplied by "Total Operating Revenues" (E71).
HEAT, LIGHT & POWER-OPER.EXP.	598	0.00000 = E598	Computes "Heat, Light & Power--Operating Expenses" (E78),
	599		when multiplied by "Total Operating Revenues" (E71).
COMPUTER TOTAL ASSETS	600	3.87170 = E600	Computes "Computed Total Assets" (E148),
	601		when multiplied by "Total Operating Revenues" (E71).
ACCTS. REC.--CURRENT ASSETS	602	0.00025 = E602	Computes "Accounts Receivable--Current Assets" (E525),
	603		when multiplied by "Computed Total Assets" (E148).
DUE FROM OTHER FUNDS-C.ASS.	604	0.00000 = E604	Computes "Due From Other Funds--Current Assets" (E526),
	605		when multiplied by "Computed Total Assets" (E148).
DUE FROM OTHER GOV'TS.	606	0.00000 = E606	Computes "Due From Other Governments--Current Assets" (E527),
	607		when multiplied by "Computed Total Assets" (E148).
INVENTIRY AT COST-C. ASSETS	608	0.00025 = E608	Computes "Inventory at Cost--Current Assets" (E528),
	609		when multiplied by "Computed Total Assets" (E148).
OTHER--CURRENT ASSETS	610	0.03266 = E610	Computes "Other--Current Assets" (E529),
	611		when multiplied by "Computed Total Assets" (E148).
PLANT & EQUIP.--FIXED ASSETS	612	0.82500 = E612	Computes "Plant & Equipment--Fixed Assets" (E540),
	613		when multiplied by "Computed Total Assets" (E148).
CONSTRUC. IN PROG.-F. ASSETS	614	0.00000 = E614	Computes "Construction in Progress--Fixed Assets" (E543),
	615		when multiplied by "Computed Total Assets" (E148).
	616		
	617		
	618		
	619		
	620		
	621		
	622		
	623		
OTHER INCOME--NET N/O EARN.	624	0.00000 = E624	Computes "Other Income--Net Non-Operating Earnings" (E100),
	625		when multiplied by "Total Operating Revenues" (E71).
OTHER--NET NON-OP. EARNINGS	626	0.00000 = E626	Computes "Other--Net Non-Operating Earnings" (E103),
	627		when multiplied by "Total Operating Revenues" (E71).
	628		
	629		
	630		
	631		
ACCTS. PAY.--CURR. LIABIL.	632	0.00000 = E632	Computes "Accounts Payable--Current Liabilities" (E153),
	633		when multiplied by "Computed Total Assets" (E148).
ACCRUED EXP.--CURR. LIABIL.	634	0.00000 = E634	Computes "Accrued Expenses--Current Liabilities" (E154),
	635		when multiplied by "Computed Total Assets" (E148).
SHORT-TERM DEBT--C. LIABIL.	636	0.00000 = E636	Computes "Short-Term Debt--Current Liabilities" (E155),
	637		when multiplied by "Computed Total Assets" (E148).
CURR. LIABIL. PART OF LT. D.	638	0.00000 = E638	Computes "Current Liabilities Part of Long-Term Debt" (E156),
	639		when multiplied by "Computed Total Assets" (E148).
CURR.LIABIL.DUE OTHER FUNDS	640	0.00000 = E640	Computes "Current Liabilities Due to Other Funds" (E157),
	641		when multiplied by "Computed Total Assets" (E148).
OTHER CURRENT LIABILITIES	642	0.08900 = E642	Computes "Other Current Liabilities" (E158),
	643		when multiplied by "Computed Total Assets" (E148).
CONTRACTS PAY. FROM R. ASSETS	644	0.00000 = E644	Computes "Contracts Payable From Restricted Assets" (E162),
	645		when multiplied by "Computed Total Assets" (E148).
DEPOSITS PAY. FROM R. ASSETS	646	0.00000 = E646	Computes "Deposits Payable From Restricted Assets" (E163),
	647		when multiplied by "Computed Total Assets" (E148).
ADVANCES FROM OTHER FUNDS	648	0.00000 = E648	Computes "Advances From Other Funds" (E167),
	649		when multiplied by "Computed Total Assets" (E148).
INTERMEDIATE-TERM DEBT	650	0.23600 = E650	Computes "Intermediate-Term Debt--Long-Term Liabilities" (E170),
	651		when multiplied by "Computed Total Assets" (E148).

PREFERRED STOCK--EQUITY	652	0.01900 = E652	Computes "Preferred Stock--Equity" (E173), when multiplied by "Computed Total Assets" (E148).
	653		
LONG-TERM DEBT	654	0.31300 = E654	Computes "Long-Term Debt" (E171), when multiplied by "Computed Total Assets" (E148).
	655		
COMMON STOCK--EQUITY	656	0.32400 = E656	Computes "Common Stock--Equity" (E174), when multiplied by "Computed Total Assets" (E148).
	657		
CONTRIBUTED CAPITAL-EQUITY	658	0.00000 = E658	Computes "Contributed Capital--Equity" (E175), when multiplied by "Computed Total Assets" (E148).
	659		
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	670		

LOOK-UP TABLE FOR LOCATING THE CELL ADDRESSES OF THE MULTIPLIERS

ALPHABETIZED NAMES OF MULTIPLIERS	CELL ADDRESSES OF MULTIPLIERS
ACCRUED EXPENSES--CURRENT LIABILITIES	E634
ACCOUNTS PAYABLE--CURRENT LIABILITIES	E632
ACCOUNTS RECEIVABLE--CURRENT ASSETS	E602
ADVANCES FROM OTHER FUNDS	E648
CASH, AVAILABLE FOR WITHDRAWAL	E586
CASH, END OF YEAR	E584
COMMON STOCK--EQUITY	E656
COMPUTED TOTAL ASSETS	E600
CONSTRUCTION IN PROGRESS--FIXED ASSETS	E614
CONTRACTS PAYABLE FROM RESTRICTED ASSETS	E644
CONTRIBUTED CAPITAL--EQUITY	E658
CURRENT LIABILITIES PART OF LONG-TERM-DEBT	E638
CURRENT LIABILITIES DUE OTHER FUNDS	E640
DEPOSITS PAYABLE FROM RESTRICTED ASSETS	E646
DEPRECIATION--VARIABLE EXPENSES	E574
DUE FROM OTHER FUNDS--CURRENT ASSETS	E604
DUE FROM OTHER GOVERNMENTS	E606
EMPLOYEE SALARIES--OPERATING EXPENSES	E592
FRINGE BENEFITS--OPERATING EXPENSES	E596
HEAT, LIGHT & POWER--OPERATING EXPENSES	E598
INSURANCE--VARIABLE EXPENSES	E576
INTERMEDIATE-TERM DEBT	E650
INVENTORY AT COST--CURRENT ASSETS	E608
LONG-TERM DEBT	E654
MAINTENANCE--OPERATING EXPENSES	E570
OTHER ASSETS	E582
OTHER CURRENT LIABILITIES	E642
OTHER INCOME--NET NON-OPERATING EARNINGS	E624
OTHER (TAXES)--VARIABLE EXPENSES	E580
OTHER--CURRENT ASSETS	E610
OTHER--NET NON-OPERATING EARNINGS	E626
OTHER--OPERATING EXPENSES	E572
PLANT & EQUIPMENT--FIXED ASSETS	E612
PREFERRED STOCK--EQUITY	E652
PROFESSIONAL FEES--VARIABLE EXPENSES	E578
SHORT-TERM DEBT--CURRENT LIABILITIES	E636
SOCIAL SECURITY BENEFITS	E594
SUPPLIES & MATERIALS	E568