MINNESOTA
PUBLIC UTILITIES COMMISSION

Staff Briefing Papers

Volume III, Cost of Capital

Meeting Date	August 4, 2020 (Oral Argument) August 6, 2020 (Deliberations)		Agenda Item 1**
Company	Great Plains Natural Gas Co., a Division of Montana-Dakota Utilities Co.		
Docket No.	**G-004/GR-19-511**		
	In the Matter of the Petition by Great Plains Natural Gas Co., a Division of Montana-Dakota Utilities Co., for Authority to Increase Natural Gas Rates in Minnesota		
Issues	1. What is the Appropriate Capital Structure for Great Plains Natural Gas Co? 2. What is the Appropriate Cost of Debt for Great Plains Natural Gas Co? 3. What is the Appropriate Cost of Equity for Great Plains Natural Gas Co? 4. What is the Appropriate Overall Rate of Return for Great Plains Natural Gas Co? 5. Is Great Plains' proposed treatment of Preferred Stock reasonable?		
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✓ **Relevant Documents** **Date**

Relevant documents are listed on the cover page of Vol. I of the briefing papers.
References to the case record are provided in the footnotes in the briefing papers

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The attached materials are work papers of the Commission Staff. They are intended for use by the Public Utilities Commission and are based upon information already in the record unless noted otherwise.

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I. Introduction

The amount of return allowed on rate base is called the cost of capital and is measured as a percentage. This percentage is multiplied by the rate base to determine return on capital to be allowed to be collected from rates.

Calculation of cost of capital consists of three parts:

1. Capital structure, which is a breakdown of the total value of the company between debt (consisting of short-term debt and long-term debt) and capital (consisting primarily of common equity).
2. Cost of Debt, which represents the actual, embedded cost of long-term debt (usually bond issues) weighted by outstanding balance, and short-term debt.
3. Cost of Equity, which represents the required return on invested capital to allow the utility to compete effectively to attract investors in the capital markets.

An amount equal to the approved rate base times the overall cost of capital will be the authorized Rate of Return (ROR) on Rate Base, a part of the overall revenue requirement.

The authorized rate of return on equity (ROE) capital is one of the main disputed issue in this rate case. Initially, Great Plains requested a return on equity of 10.2%, including a 0.10% flotation cost adjustment.

The ALJ recommended an ROE of ~~9.67%~~ 9.62%, which is the Department's Mean High Two Stage Growth Model result in Surrebuttal Testimony with 0.05% flotation costs, for a total rate of return of ~~9.72%~~ 9.67%. Great Plains did not take exception to this recommendation but did take exception to some of the ALJ's reasoning.

The Department, however, did take exception to the ALJ's recommendation. According to the Department, the ALJ's recommendation is unsupported by the record and by past Commission decisions. The Department recommended an ROE of 8.77% plus an 0.05% flotation adjustment, for a total rate of return of 8.82%.

The following table compares the two weighted average cost of capital (WACOC) calculations without flotation costs.

Table 2-1 – Cost of Capital Recommendations

WACOC without flotation costs	Capital Structure	GP, ALJ		Department	
Capital	Percentage	Cost Rate	Weighted Cost Rate	Cost Rate	Weighted Cost Rate
Short Term Debt	4.053%	3.693%	0.150%	3.693%	0.150%
Long Term Debt	45.132%	4.712%	2.127%	4.712%	2.127%
Equity					
GP, ALJ	50.815%	~~**9.67%**~~ **9.62%**	~~4.914%~~ 4.888%		
Department	50.815%			**8.77%**	4.456%
WACOG	100.000%		~~7.190%~~ 7.165%		6.733%

The following table compares the two weighted average cost of capital calculations (inclusive of flotation costs):

Table 2-2 – Cost of Capital With Flotation Costs

WACOC with flotation costs	Capital Structure	GP, ALJ		Department	
Capital	Percentage	Cost Rate	Weighted Cost Rate	Cost Rate	Weighted Cost Rate
Short Term Debt	4.053%	3.693%	0.150%	3.693%	0.150%
Long Term Debt	45.132%	4.712%	2.127%	4.712%	2.127%
Equity					
GP, ALJ	50.815%	~~**9.72%**~~ **9.67%**	~~4.939%~~ 4.914%		
Department	50.815%			**8.82%**	4.482%
WACOG	100.000%		~~7.216%~~ 7.190%		6.758%

II. Capital Structure

To arrive at the cost of capital (i.e. the weighted average cost of capital or WACOC) for the Company, it is necessary to determine a reasonable capital structure, which is made up of components that may include common equity, short-term debt and long-term debt held by Great Plains Natural Gas Co. (Great Plains, GP, or Company).

Great Plains proposed a capital structure as follows:

Table 2-3 – Capital Structure

Capital	Percentage
Short Term Debt	4.053%
Long Term Debt	45.132%
Equity	50.815%
	100%

This capital structure is based on the actual capital structure for the regulated operations of Montana-Dakota Utilities Co., of which Great Plains is an operating division.

A. Department Review

The Department of Commerce, Division of Energy Resources (Department or DOC-DER) reviewed Great Plains' capital structure in comparison with a representative list of utilities nationally and found that Great Plains capital structure was within typical norms and was appropriate for a utility of its type.

B. ALJ Report

The ALJ accepted the capital structure provided by Great Plains and recommended by the Department. The ALJ provided the following Findings of Fact and Conclusions of Law in her report:

159. The term "capital structure" refers to the combination of short-term debt, long-term debt, and equity that a company uses to finance its activities. The ratio between debt and equity that a rate-regulated utility chooses will affect its overall rate of return.

160. Generally, a utility's overall cost of capital is the average of the costs of long-term debt, short-term debt, and equity it has, weighted by the amount of each type of financing that it uses. Thus, to arrive at the cost of capital (the overall rate of return), it is necessary to determine the reasonable ratios of long-term debt, short-term debt, and common stock equity for GP overall.

161. GP proposed to establish a capital structure consisting of 50.815 percent common equity, 4.053 percent short-term debt, and 45.132 percent long-term debt. The Company considered the mean proportions of common equity, preferred equity, short-term debt, and long-term debt for the most recent year for each of the companies in its proxy group to develop a reasonable capital structure. GP also considered credit rating agency expectations in developing its proposal.

162. The DOC-DER compared the Company's proposed capital structure to the average capital structure of companies in the DOC-DER's Proxy Group (selection and determination of the parties' proxy groups is discussed in Section IX, B, 4 below). The

following is a summary of GP's capital structure and the capital structures of the members of the DOC-DER Proxy Group as of the end of their most recent fiscal years:

Summary of GP's Proposed Capital Structure and Capital Structures of DER Proxy Group Members

	2016 Capital Structure Ratios			
Company	Short-Term Debt	Long-Term Debt	Preferred and Other Equity	Common Equity
Great Plains	4.05%	45.13%	0.00%	50.82%
ATO	4.77%	36.22%	0.00%	59.01%
NWN	12.68%	42.89%	0.00%	44.43%
OGS	8.26%	35.44%	0.00%	56.31%
SR	13.74%	39.24%	4.47%	42.54%
SWX	3.29%	46.27%	1.76%	48.69%
Minimum	3.29%	35.44%	0.00%	42.54%
Average	8.55%	40.01%	1.25%	50.19%
Maximum	13.74%	46.27%	4.47%	59.01%

163. The DOC-DER determined that GP's proposed equity ratio was almost equal to the DOC-DER Proxy Group's average, and its short- and long-term debt ratios were within the ranges of the DOC-DER Proxy Group. Therefore, the DOC-DER concluded that GP's proposed capital structure is reasonable.

C. Exceptions to ALJ Report

No parties filed exceptions to the ALJ report on capital structure.

III. Cost of Debt

The cost of long term debt is calculated by averaging the annual interest cost on the net proceeds balances of all forms of long term debt. In the case of Great Plains, $730 million in outstanding long-term debt, in the form of unsecured senior notes with maturities ranging from 10 to 40 years are calculated to have an average cost of 4.712% for 2019. This compares with a projected 2020 average cost of debt of 4.702% and a 2018 end of year cost of debt of 4.914%. [1] Great plains issued three significant bond issues with total principal of $200 million in 2019, which accounts for the drop in the long term cost of debt in 2019 relative to 2018.

[1] Great Plains Schedule D-1

No parties disputed the cost of long term debt in this rate case. The Department reviewed the cost of long-term debt provided by Great Plains and found it reasonable.

The cost of short term debt is similarly calculated by averaging the interest rates on the average daily balances of short term debt issues such as short term bond notes, bank borrowing, and lines of credit, and adding in negotiation and commitment fee. Calculation of average short-term debt is shown in the table below for 2019.[2]

Table 2-4 – Cost of Short Term Debt

2019	Balance	Annual Cost	Average Cost
12 Mo. Average Balance	$82,352,265	$2,238,639	2.718%
Fees		$352,863	
Total Short Term	$82,352,265	$2,591,502	3.147%

No parties disputed Great Plains' calculation of the cost of short-term debt. The Department reviewed the cost of short-term debt provided by Great Plains and found it reasonable.

A. ALJ Report

The ALJ accepted Great Plains' proposed long- and short-term debt costs. The ALJ proposed the following Findings of Fact on cost of debt:

164. With respect to cost of debt, GP proposed a short-term debt cost of 3.693 percent, including expense associated with the amortization of fees related to its revolving credit facility.

165. The Company proposed a long-term debt cost of 4.712 percent, which is the average of the Company's estimated debt costs as of December 31, 2019, and December 31, 2020. The DOC-DER noted that the Company's proposed cost of long-term debt reflected the issuance of $275 million in new long-term debt in late 2019 and 2020.

166. The DOC-DER analyzed the Company's proposed short- and long-term debt costs and concluded that the Company's proposed debt costs were reasonable.

167. Consequently, GP and the DOC-DER agree that it is reasonable for the capital structure to include costs of short-term debt of 3.693 percent long-term debt of 4.712 percent.

B. Exceptions to ALJ Report

No parties disputed the ALJ's proposed Findings for Cost of Debt.

[2] Great Plains Schedule D-2

IV. Cost of Equity Capital

A. Introduction

The general criteria informing fair rate of return decisions were established in a landmark case, Bluefield Water Works & Improvement Company v. Public Service Commission of West Virginia (262 U.S. 679, 693 (1923)). In that case, the United States Supreme Court ruled that:

> The return should be reasonably sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties. A rate of return may be reasonable at one time and become too high or too low by changes affecting opportunities for investment, the money market, and business conditions generally.

In Federal Power Commission v. Hope Natural Gas Company (320 U.S. 591, 603 (1944)), the Supreme Court further elaborated on the standard of reasonable return on equity:

> From the investor or company point of view, it is important that there be enough revenue not only for operating expenses, but also for the capital costs of the business. These include service on the debt and dividends on the stock. . . . By that standard, the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and attract capital.

The standard established by the Supreme Court resolves into the following three requirements:

> the allowed rate of return should
>
> a. be commensurate with returns on enterprises with corresponding risks;
> b. sufficient to maintain the financial integrity of the regulated company; and
> c. adequate to allow the company to attract capital on reasonable terms.

Great Plains relied on two models of capital costs primarily to reach its proposed cost of equity – the Constant Growth Discounted Cash Flow (DCF) Model, and the Two-Stage Discounted Cash Flow (Two Stage DCF) Model. It then used the Capital Asset Pricing Model (CAPM), a Bond Yield Plus Risk Premium approach, and an Expected Earnings analysis to confirm and support its results. Witness Ann Bulkley documented and supported these

analyses and updated them in her rebuttal testimony to account for changing market conditions.

The Department relied primarily on the Two Stage Growth DCF Model, with supporting evidence from the Constant Growth DCF and the CAPM. The Department critiques the models used by Great Plains, specifically the Bond Yield Plus Risk Premium and Expected Earnings analysis, but does not rely on either type of analysis for its conclusions.

Discounted Cash Flow modeling relies on the concept that a reasonable return on equity can be reached by examining stock prices and market projections of expected growth for a proxy group of companies assumed to be similar to Great Plains. Selection of an appropriate 'proxy group' is critical, because different types of companies have different long-term growth prospects, dividend yields, and risk profiles, resulting in very different required capital returns. As an extreme example, an online company in a competitive market will have very different growth prospects and risk profiles from a gas utility, and so would be a poor proxy for a company such as Great Plains.

The two forms of Discounted Cash Flow modeling used in this case are the Constant Growth DCF and the Two Stage Growth DCF. Each use the same basic data, but the constant growth DCF assumes that projected growth in both the short and long term are the same, while the Two Stage DCF assumes that short-term growth and long-term growth can be different. The basic approach is to continue the analysis of the constant growth model for five years, but to revise the growth in later years of the model towards the overall mean for companies with growth rates significantly different from the overall mean growth.

The Capital Asset Pricing Model is a risk premium approach that estimates the cost of equity as a function of the risk-free return plus a risk premium to compensate investors for risk.

The Bond Yield Plus Risk Premium analysis conducted by Great Plains calculates the appropriate rate of return by adding a risk premium to a risk-free interest rate, corresponding in Great Plains' case to the return on long-term (30 year) Treasury bond rates. The risk premium estimated by Great Plains was calculated by running a regression of risk premiums imputed from gas utility ROE results in jurisdictions across the US (including, but not limited to, Minnesota) from 1990 to 2018 against the risk-free interest rate at the time the rate is set. Great Plains found that there is a significant negative relationship between the risk premium and the risk-free interest rate, and calculated its risk premium based on current long-term bond rates. This methodology strongly ties its projected ROE to ROEs awarded by other jurisdictions in rate cases over the last 30 years.

The Expected Earnings Analysis bases its estimate on projected ROEs for a proxy group of similar risk companies for the period 2022-2024. It is a "Comparable Earnings" approach which compares projected earnings to book value of the stock to reach a required return on equity.

1. ALJ Report – Introductory Findings

The ALJ provided introductory findings which state the principles behind rate of return and return on equity. These findings also introduced the primary witnesses.

167(sic)[3]. As part of this proceeding, the Commission must determine what constitutes a fair overall rate of return (ROR), also called cost of capital, for GP. ROR is calculated as the average of reasonable costs of long-term debt, short-term debt, and equity, weighted by the amount of each type of financing the Company uses. In general, the cost of equity equals the return on equity (ROE) that GP must pay to induce equity investments in its regulated operations.

168. As set forth above, GP and the DOC-DER agree on the Company's amount of long-term debt, short-term debt, and common equity needed by GP to finance its operations. These amounts are based upon GP's actual capital structure. GP and the DOC-DER disagree, however, on the appropriate return on common equity for the Company.

169. Both GP and the DOC-DER presented expert witnesses on the subject of return on equity (ROE).

170. GP's expert witness on this issue was Ann Bulkley. Ms. Bulkley is a Senior Vice President at Concentric Energy Advisors, Inc. She holds a bachelor's degree in economics and finance from Simmons College and a master's degree in economics from Boston University. She has more than 20 years of experience consulting with energy companies.

171. The DOC-DER's expert witness on ROE was Craig Addonizio. Mr. Addonizio is a Public Utilities Financial Analyst at the DOC-DER. He has a bachelor's degree in economics from Carleton College and a master's degree in business administration from the University of Minnesota's Carlson School of Business. He has approximately nine years of experience with the DOC-DER.

172. GP asserts that a ROE of 10.2 percent is required for the Company to be able to raise capital on reasonable terms. The DOC-DER disagrees and recommends a ROE of 8.82 percent.

173. The Commission must set rates that are just and reasonable. The determination of reasonableness involves a balancing of consumer and utility interests.

174. A reasonable rate enables a public utility not only to recover operating expenses, depreciation, and taxes, but also to compete for funds in capital markets (that is, to attract sufficient capital at reasonable terms). Minnesota law recognizes this principle

[3] The ALJ inadvertently duplicated finding numbers at 167, and then skipped Finding of Fact 229. Findings of Fact 167 through 229 could be corrected to show as Findings of Fact 168-230 without disturbing the numbering of the other findings.

when it defines a "fair and reasonable" rate of return as the rate, when multiplied by rate base, that will give a utility a reasonable return on its total investment. This means that a fair return is one that enables the utility to attract sufficient capital (i.e., induce investors) at reasonable terms. However, Minnesota law also requires that any doubt as to reasonableness should be resolved in favor of the consumer. Accordingly, a ROR that provides the utility a greater return than is necessary to provide reliable service to consumers at reasonable rates would be excessive.

175. The principals of utility rate-setting have been established in two seminal Supreme Court cases: Bluefield Waterworks & Improvement Co. v. Pub. Serv. Comm's of W. Va (Bluefield), 262 U.S. 679 (1923) and Fed. Power Comm'n v. Hope Natural Gas Co. (Hope), 320 U.S. 591 (1944).

176. In Bluefield, the United States Supreme Court declared that a utility's return should be: (1) "reasonably sufficient to assure confidence in the financial soundness of the utility;" and (2) "adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties."

177. In Hope, the Court reaffirmed and refined the Bluefield principles. The Court reiterated that utilities are entitled to a return that: (1) is sufficient to cover operating expenses and capital costs of the business (including services on debt and dividends on stock); (2) is commensurate with returns on investments in other enterprises having corresponding risks; (3) assures confidence in the financial integrity of the enterprise; and (4) allows the company to maintain its credit and attract capital.

178. But the analysis of a reasonable return must also strike an equitable balance between investors and ratepayers. As explained by the Court in Covington: [S]tockholders are not the only persons whose rights or interests are to be considered. The rights of the public are not to be ignored. . . . The public cannot properly be subjected to unreasonable rates in order simply that stockholders may earn dividends.

179. The decision in Natural Gas Pipeline Company of America reemphasized this point: The consumer interest cannot be disregarded in determining what is a 'just and reasonable' rate. Conceivably, a return to the company of the cost of service might not be "just and reasonable" to the public.

There were no exceptions to the introductory materials in the ALJ Report's proposed findings.

B. Proxy Group Selection

Since Great Plains is not itself available as a publicly traded company, the analyst cannot rely primarily on Great Plains' own dividend yield and projected growth rate to find an appropriate cost of capital. Also, having a proxy group which represents a broader market

of similar companies helps avoid biases that could be brought in by transitory events, moderating the effects of unusual events that affect a single company. The primary issues raised by parties in this case revolved around proxy selection, and so this issue will be addressed in some depth here.

1. Great Plains Proxy Group

Great Plains began proxy selection with 10 companies that were classified by Value Line, an investment research publisher, as "Natural Gas Distribution Utilities". Great Plains then applied the following selection criteria to these companies to reach its proxy group:

- Pay consistent quarterly cash dividends
- Have investment grade long-term issuer ratings from S&P and/or Moody's
- Are covered by at least two utility industry analysts (selected from Value Line, Yahoo, and Zack's, the leaders in this industry)
- Have positive long-term earnings growth forecasts from at least two utility industry equity analysts
- Derive more than 70% of their total operating income from regulated operations
- Derive more than 60% of their total operating income from gas distribution operations
- Were not parties to a merger or transformative transaction during the analytical period.

From the original list of ten companies, Great Plains selected eight which fit the above criteria:

Table 2.5 – Great Plains Proxy Group

Company	Ticker
Atmos Energy Corporation	ATO
New Jersey Resources Corporation	NJR
NiSource	NI
Northwest Natural Gas Company	NWN
ONE Gas, Inc.	OGS
South Jersey Industries, Inc.	SJI
Southwest Gas Corporation	SWX
Spire, Inc.	SR

2. Department Proxy Group

The Department began proxy group selection with all companies that have Standard Industrial Classification (SIC) code of 4924 (Natural Gas Distribution Companies) and

are traded on one of the stock exchanges. The Department then added companies classified by Value Line as natural gas utilities. The Department then screened this list to exclude:

- Companies with S&P credit ratings outside the range of BBB to A+
- Companies that derive less than 60% of operating income from natural gas distribution
- Companies which were involved in mergers and acquisitions

This resulted in a proxy group of 5 companies

Table 2.6 – Department Proxy Group

Company	Ticker
Atmos Energy Corporation	ATO
Northwest Natural Gas Company	NWN
ONE Gas, Inc.	OGS
Southwest Gas Corporation	SWX
Spire, Inc.	SR

This list is a subset of the proxy group identified by Great Plains, excluding New Jersey Resources, NiSource, and South Jersey Industries. The difference in lists is due to a methodological difference in Great Plains' analysis relative to the Department. In identifying which companies "derive less than 60% of operating income from natural gas distribution", Great Plains ignores instances where particular segments of a company had negative operating income, where the Department does not.[4] This results in the following differences:

South Jersey Industries Excluded

Great Plains excluded from its analysis of operating income operating income losses in South Jersey Industries Energy Services Segment in 2018, relating to a Solar power project. Great Plains argues that the one-time impairment taken by South Jersey to mark down the value of its solar project should be excluded from calculation of percentage of operating income derived from natural gas. Had the Department done so, it would have met the criteria. Further, for the 9 year period 2010 to 2018, South Jersey only failed the 60% criteria in 2017 and 2018, further justifying ignoring the one-time charge.[5]

The Department rebuts by stating that evaluation of South Jersey based on 2010-2017 results are invalid, arguing that companies change over time. The Department

[4] Addonozio Surrebuttal page 6 at 2-13.

[5] Bulkley Rebuttal pages 20-22.

notes that even in 2016, prior to the impairment, South Jersey's share of operating income from natural gas had dropped from a range of 70.88% to 88.45% in 2010-2015 to 64.4%, a significant reduction. Even without the impairment charge in 2018, the Department argues that 2018 would only rise to 51.8%, below the threshold for inclusion. Further, assuming that this is a one-time impairment is speculative and could represent a real reduction in South Jersey's reliance on natural gas operations going forward. [6]

NiSource Excluded

The Department found that NiSource derived only 39.2% of its total operating income from natural gas distributions operations in 2018. This is partly the result of negative income in 2018 from its regulated natural gas distribution operations caused by an over-pressurization event at a subsidiary. Great Plains argues in rebuttal that it is reasonable to exclude this cost from analysis, and that from 2010 to 2017 NiSource reached the threshold of 60% in 6 of 8 years.

The Department in Surrebuttal argues that NiSource failed to meet the 60% criteria in 2 of the 8 years, including 2017, the most recent year unaffected by the event, and barely met the threshold in several other years. Further, there is no particular reason to believe that the lawsuits and other costs associated with the over-pressurization event won't result in lower operating income from natural gas distribution operations in future years. [7]

New Jersey Resources Excluded

The Department found that New Jersey Resources derived 49.26% of its operating income from regulated natural gas distribution operations in 2018. Great Plains argues that this is due to a large spike in operating income in Energy Services in 2018. It cites that natural gas distribution in 2016 and 2017 accounted for 60.51% and 70.67% of operating income respectively.

The Department notes that it used 2017 through 2019 in its analysis, and that NJR met the 60% screen in 2017 and 2019. It states in rebuttal[8] that it excluded New Jersey Resources due to the credit rating screen rather than the operating income screen. The Department notes that New Jersey Resources does not have a credit rating from S&P.

Great Plains argues that New Jersey Natural, a subsidiary of New Jersey Resources, has investment grade credit ratings from Moody's and Fitch, and had an investment

[6] *Ibid*, page 9.

[7] *Ibid*, page 13.

[8] *Ibid*, page 19.

grade credit rating from S&P as recently as May, 2019, when S&P withdrew its rating at the request of New Jersey Natural. [9]

The Department notes that it is speculative to assume that the S&P rating would not have fallen below the criteria, especially since S&P had downgraded New Jersey Natural in 2018 twice, with a negative outlook. This means that the company was at risk for another reduction which likely would have taken it below the criteria. The Department also notes that the Moody's rating cited by Great Plains is for secured, rather than unsecured debt, and so overstates New Jersey Natural's creditworthiness relative to S&P ratings, which cover unsecured debt. [10]

3. ALJ Report

The ALJ provided the following Proposed Findings on Proxy Group selection:

187. The DOC-DER's expert, Mr. Addonizio, chose a group of proxy companies by applying the following criteria:

- The company is listed on the Compustat Research Insight data base and has a Standard Industrial Classification code of 4924 (natural gas distribution);
- The company is traded on a stock exchange;
- The company has a Standard & Poor's (S&P) credit ratings within the range of BBB to A+; and,
- The company received an average of at least 60 percent of their operating income from natural gas distribution during the most recent three years for which data is available.

188. Applying these criteria, Mr. Addonizio identified four publicly-traded companies as comparable proxy companies: Atmos Energy Corporation; Northwest Natural Holding Company; ONE Gas, Inc.; and Spire, Inc.

189. Mr. Addonizio then looked to Value Line to identify other companies that are classified as natural gas companies. Value Line identified four publicly-traded natural gas utilities, but only one company met both the credit rating and operating income thresholds listed above: Southwest Gas Holdings, Inc.

190. Ultimately, Mr. Addonizio's screening process resulted in the following proxy group (DOC-DER Proxy Group):

[9] Bulkley Rebuttal, Page 27-29.

[10] Addonizio Surrebuttal, Page 26.

Company	Ticker
Atmos Energy Corporation	ATO
Northwest Natural Holding Company	NWN
ONE Gas, Inc.	OGS
Spire Inc.	SR
Southwest Gas Holdings, Inc.	SWX

Source: Ex. DER-1, CMA-2 (Addonizio Direct)

191. GP's expert, Ms. Bulkley, also identified a proxy group for the Company's DCF analysis. Ms. Bulkley began with a group of 10 companies identified by Value Line as "natural gas distribution utilities." Ms. Bulkley then applied the following criteria to select companies that:

- pay consistent quarterly cash dividends, because companies that do not cannot be analyzed using the Constant Growth DCF model;
- have investment-grade long-term issuer ratings from S&P and/or Moody's;
- are covered by at least two utility industry analysts;
- have positive long-term earnings growth forecasts from at least two utility industry equity analysts derive more than 70 percent of their total operating income from regulated operations;
- derive more than 60 percent of regulated operating income from gas distribution operations; and,
- were not parties to a merger or transformative transaction during the analytical periods relied on.

192. Based on this screening criteria, Ms. Bulkley identified the following eight companies as the GP Proxy Group:

Company	Ticker
Atmos Energy Corporation	ATO
New Jersey Resources Corporation	NJR
NiSource Inc.	NI
Northwest Natural Gas Company	NWN
ONE Gas, Inc.	OGS
South Jersey Industries, Inc.	SJI
Southwest Gas Corporation	SWX
Spire, Inc.	SR

193. Both GP and the DOC-DER include Atmos Energy Corporation (Atmos), Northwest Natural Holding Company (Northwest Natural), ONE Gas, Inc. (ONE Gas), Spire Inc. (Spire), and Southwest Gas Holdings, Inc. (Southwest Holdings) in their proxy groups. However, the DOC-DER specifically excluded New Jersey Resources Corporation (NJ Resources), NiSource Inc. (NiSource), and South Jersey Industries, Inc. (South Jersey) from its proxy group. Both GP and the DOC-DER experts applied a Constant Growth and a Two Stage Growth DCF on their respective proxy groups.

4. Exceptions to ALJ Report – Proxy Group

a. Great Plains

Great Plains agrees with the ALJ recommendation of 9.67%, and believes it is supported by the DCF and collaborating return analysis presented by both the Department and the Company. Great Plains disagrees, however, with the ALJ conclusion that "the DCF conducted by the DOC-DER is more reliable than that presented by the Company."[11]

The Company believes the ALJ erred in accepting the Department's exclusion of two of the three companies in Great Plains' proxy group for the DCF, South Jersey Industries and NiSource. The Company argues that both companies failed to reach the 60% threshold of operating income from regulated natural gas operations due to one-time events. For South Jersey, this consisted of impairment charges taken against its on-site energy production segment associated with solar generation assets owned by another business segment. These impairments existed in 2017 and 2018, but not 2019. Great Plains cites South Jersey's 2019 results, published on February 26, 2020 and available at the time of Surrebuttal, which show that "loss on property, plant and equipment" was 90% lower in 2019 than 2017 and 2018. [12] This shows that the impairments were one-time events.

In rebuttal on behalf of Great Plains, Ms. Bulkley had calculated the percentage of operating income derived from regulated natural gas distribution operations for South Jersey using

[11] ALJ Report ¶ 258

[12] Ex. GP-35, SJI Reports 2019 Results; Updates 2020 Guidance at 11.

the Department's methodology for 2010-2018 and showed that the only two years below 60% were 2017 and 2018, corresponding to these one-time charges.

Similarly, NiSource failed to meet the 60% threshold solely due to the financial cost of a significant event that occurred as a result of over-pressurized lines on the system of a NiSource subsidiary on September 13, 2018, resulting in negative operating income from its regulated natural gas distribution operations in 2018. [13] Again, the Company argues that the only year NiSource failed the to reach at least 55% was in 2018, where it derived 39.2% of its total operating income from natural gas operations, and that this was the result of this one-time incident.

Great Plains argues that including South Jersey and NiSource would have raised the Department's DCF result to a mean ROE of 9.23% and a high result of 10.77%. Great Plains notes that the recommended ROE of 9.67% is comfortably within this range, as is Great Plains' original request of 10.2%.

Great Plains did not provide a specific list of excisions or revisions to the proposed Findings for Return on Capital.

b. Department of Commerce

The Department notes that the ALJ report found that Great Plains' proxy group for the DCF unreasonably used three companies and one estimated growth rate, but used that proxy group to support greater reliance on the CAPM. The report agreed with the Department that two companies should be excluded from the DCF due to failure to reach the minimum 60% operating income threshold for regulated operations, and that a third should be excluded due to a lack of an issuer-level credit rating. It also agreed with the Department in excluding the Value Line estimate of Northwest Natural's growth rate, as it was five times higher than any other growth rate and appeared to reflect a non-representative single-time event. However, in supporting the CAPM, the ALJ report cited the Great Plains DCF results which relied on the excluded companies and growth rate. [14] The Department also notes that the ALJ suggests that Mr. Addonizio recommended adjusting, rather than excluding, the Value Line growth rate estimate for Northwest Natural. [15]

The Department thus recommends striking Findings of Fact 272 and 273.

~~272. It is also more consistent with Ms. Bulkley's application of Mr. Addonizio's DCF analysis when applied to GP's Proxy Group (which included the three companies excluded by Mr. Addonizio). Using Mr. Addonizio's methodology for DCF, but applied to GP's larger proxy group, would result in a Two Stage~~

[13] Ex. DER-1, Direct Testimony of Craig Addonizio at 50 ("Addonizio Direct"); Bulkley Rebuttal at 22-23.

[14] ALJ Report ¶ 272–73.

[15] Compare Report ¶ 272–73, with Ex. DER-9 at 29–31 (Addonizio Surrebuttal)

~~Growth DCF mean result of 9.47 percent before the application of flotation costs, and 9.52 percent after the addition of Mr. Addonizio's recommended flotation costs of five points.~~

~~273. When using the GP Proxy Group and adjusting the Value Line earning growth rate for Northwest Natural, as recommended by Mr. Addonizio, the mean Two Stage Growth DCF is 9.58 percent before the addition of flotation costs, and 9.63 percent after the addition of five basis points flotation costs. In other words, applying Mr. Addonizio's methodology to GP's Proxy Group nets results closer to Mr. Addonizio's CAPM than his own Two Stage Growth DCF results for the DOC DER Proxy Group.~~

C. Cost of Equity Capital: Discounted Cash Flow Analysis.

Great Plains provided several variants on the Discounted Cash Flow analysis as justification for its requested Rate of Return. These can be primarily split into two groups – the Constant Growth Discounted Cash Flow analyses and the Two Stage Growth Discounted Cash Flow analyses. The Two Stage Growth Discounted Cash Flow analysis has been historically relied on heavily by the Commission to set Return on Equity.

1. Constant Growth DCF

The Constant Growth DCF is based on the idea that one can calculate the return on equity being required by investors by examining the projected earnings growth rate and the dividend yield in terms of dividend divided by stock price. By adding the growth rate and the dividend yield, and then adding in Flotation costs (addressed below), one can get a reasonable estimate of how much return on equity the financial marketplace is demanding for the company. Since Great Plains is not itself featured on any stock market, the Company used the proxy group (identified above) to model its required return on equity. For the Constant Growth DCF, the basic formula is

$$k = D_1/P + g$$

where k is Return on Equity, D_1 is the dividend in year one, P is the average stock price, and g is the forecast earnings growth rate.

Dividend yield used was the actual most recent annual dividend payments for the utility divided by the average stock price over the model period of either 30, 90, or 180 days.

Earnings growth was taken from forecasts done by three financial analysis companies – Yahoo! Finance, Zacks, and Value Line.

2. Two Stage Growth DCF

A two-stage Growth DCF modifies the Constant Growth DCF to reduce the reliance on relatively short-term growth forecasts, and instead uses a second, long term growth rate for years past 5 years. If the short-term growth rate is within one standard deviation of the mean growth rate for all companies in the proxy group, then the short-term growth rate is used in the long term as well. If short-term growth rate exceeds the mean by more than one standard deviation, then the mean plus one standard deviation is used instead. If short-term growth rate is below the mean by more than one standard deviation, the mean minus one standard deviation is used instead. This allows for differences in utility long-term growth rate without over-depending on short term forecasts to shape long-term results.

The Two-stage DCF then applies the following formula:

$$P = (D_1/(1+k)) + (D_1(1+g_1)/(1+k)^2) + (D_1(1+g_1)^2/(1+k)^3) + (D_1(1+g_1)^3/(1+k)^4) + (D_1(1+g_1)^4/(1+k)^5) + (D_1(1+g_1)^4(1+g_2)/(k-g_2) \times 1/(1+k)^5$$

Where:

P is the Current Stock Price
D_1 is the Dividend in year 1
g_1 is the short term growth rate
k is the Return on Equity (the target of the calculation)
g_2 is the long-term growth rate.

This equation is then solved for k by an iterative approach in Excel, where an appropriate value of k which solves the equality above is calculated, essentially, by trial and error. Both parties used the "Goal Seek" tool in Excel to calculate k.

Great Plains provided three separate Constant Growth and Two Stage Growth DCF models – one each based on a 30-day average stock price, one on a 90-day average stock price, and one on a 180-day average stock price. The decision on time period for the stock price on the DCF has to balance two competing factors. On one hand, the most recent stock price is the one most likely to take into account all current information on the value of the stock, and so probably most represents the market's view of the value of the company. On the other hand, a longer time series of average stock prices is more likely to even out temporary variations in stock price due to daily fluctuations, rebalancing of investments due to non-market factors, 'animal spirits' in the stock market (the tendency of individuals, in a short term rally or crash, to 'follow' the market in all stocks regardless of prospects), and other ephemeral factors.

For each model, Great Plains provided a "Mean Low" ROE estimate (based on the average ROE across all proxy companies based on the lowest earnings growth estimate), a "Mean" ROE estimate (based on the average ROE across all proxy companies based on the average earnings growth estimate) and a "Mean High" ROE estimate (based on the average ROE across all proxy companies based on the highest earnings growth estimate. During Rebuttal testimony, Great Plains updated each of its models, including the all versions of the DCF.

In direct and Surrebuttal testimony, the Department provided its own Constant Growth and Two Stage Growth DCF, using only the 30 day average. The Department argued that 30 days provides adequate protection from short-term market fluctuations while avoiding stock prices which use outdated information. The Department provided Low, Mean, and High ROE, and used the same earnings growth sources – Zacks, Yahoo!, and Value Line. The Department did make one significant adjustment to its earnings growth estimates, however, in excluding the Value Line estimate of Northwest Natural Gas' growth rate.

3. Northwest Natural Gas Growth Rate

All earnings growth estimates for companies in the proxy groups for Great Plains and the Department ranged from 2.37% (Yahoo! Estimate for Spire, Inc) to 12.5% (NiSource from Value Line), except one. Value Line listed a 27% growth rate for Northwest Natural Gas Company, which is an unusually high growth rate for a gas utility. (Yahoo and Zacks listed 3.75% and 5% for Northwest Natural Gas, respectively.) The Department argues that a 27% growth rate is out of line, and identifies a one-time write-down of value of a gas storage facility in Fresno California (Gill Ranch) as the cause of the discrepancy. In 2017, Northwest Natural took a large write-off to carrying value of Gill Ranch, which reduced its earnings per share to $-1.94 per share, from $+2.12 per share in 2016 and $+2.33 per share in 2018. The Department finds that the annual growth rate in the Value Line projection of 27% is calculated based on an actual earnings per share in 2016-2018 that is artificially low due to the write-off, and over $3 per share less than earnings per share for Northwest Natural Gas in any year dating back to 2002. The Department provided several alternate estimates of earnings per share consistent with Value Line's analysis that exclude the 2017 figure. These alternates suggest growth rates of 7.42% to 13.62%, which are more in line with typical growth rates for utilities. The Department thus excludes the 27% figure from its analysis entirely.

Great Plains argues that it is invalid to modify the forecasts, especially for the Two Stage Growth DCF. The Two Stage Growth DCF already has a mechanism for reverting outlier forecast growth rates back to the mean, by limiting use of the present growth rate to five years and using a more standardized growth rate for years past five. As such, both adjusting the forecast for this one utility/forecaster combination and using a two-stage model which is intended to reduce ALL outlier growth rates, high and low, isn't sound practice.

4. DCF Results

30 Day Average Treasury Rate Discounted Cash Flow Model Results are presented in the following table.

Table 2-7 – Discounted Cash Flow Model

Model	Level	Great Plains Direct	Department Direct	Great Plains Rebuttal	Department Surrebuttal
Constant Growth	Mean Low	8.24%	7.98%	8.63%	7.90%
	Mean	9.91%	8.90%	10.4%	8.75%
	Mean High	13.69%	9.70%	14.09%	9.62%
Two Stage Growth	Mean Low	8.13%	7.99%	8.35%	7.85%
	Mean	9.69%	8.82%	10.21%	**8.77%**
	Mean High	12.66%	9.70%	13.07%	*9.62%*

Note: The Department's Final Recommendations is in **BOLD,** the ALJ's Recommendation is in *Italics*. The Department also recommended 0.05% Flotation costs, for a total ROE of **8.82%** (= 8.77% + 0.005%). Great Plains initially requested an ROE of **10.2%,** including 0.1% Flotation costs. The ALJ recommended an ROE of **9.67%,** which is the Department's Mean High Two Stage Growth Model result on Surrebuttal with 0.05% Flotation Costs added (= 9.62% + 0.005%).

5. ALJ Report – Discounted Cash Flow

The ALJ found that the DCF conducted by the Department was superior to that conducted by Great Plains, and recommended that the Commission use the results of the Department analysis for decision making. The ALJ agreed with the Department that South Jersey, NiSource, and New Jersey Natural Gas should be excluded, and that the 27% annual growth rate provided by Value Line for Northwest Natural Gas should be excluded from analysis. The ALJ was silent on whether a 30, 90, or 180 day stock price was preferred, but by choosing the Department model implicitly endorses a 30 day stock price.

The ALJ proposed the following Findings for the Discounted Cash Flow Models:

180. To determine a reasonable ROE, both GP and the DOC-DER utilized a Discounted Case Flow (DCF) model, together with checks on the reasonableness of their respective results.

181. The DCF model is a method accepted by the Commission for evaluating the likely expectations of investors. DCF analyses estimate a company's present value based on projections of how much money it will generate in the future.

182. While the cost of equity cannot be observed directly, it can be estimated based upon a stock's expected dividend yield in one year and its dividend growth rate. The DCF postulates that the current price of a stock is equal to the present value of all expected future dividends, discounted by the appropriate rate of return.

183. There were two types of DCF models utilized by the parties in this proceeding: the Constant Growth DCF and the Two Stage Growth DCF.

184. The Constant Growth DCF model assumes constant growth of dividends over time and is reflected in the following formula: The expected (required) rate of return on equity = the expected dividend yield + the expected growth rate in dividends.

185. In contrast, a Two-Stage DCF model assumes that dividends grow at one rate for a short period of time and then grow at a second, sustainable rate into perpetuity.

186. GP cannot be analyzed directly with a DCF analysis because its stock is not publicly traded on any of the stock exchanges. When a company's stock is not publicly traded, a DCF model can still be conducted but must be conducted on a "proxy group" of companies – companies with investment risks comparable to the risks of the subject company. Both GP and the DOC-DER conducted their DCF analysis on a proxy group of publicly-traded companies.

194. Under the Constant Growth DCF model, a company's cost of equity (k) is the sum of a stock's expected dividend yield and its expected growth rate. Estimating each proxy group member's expected growth rate (g) can be sourced from investment research services. Each company's dividend yield can be estimated using its current stock price (P), which is directly observable, it's most recent dividend (D1), which is also directly observable, and the company's expected growth rate (g), as expressed in the following equation:

$$k = (D_1/P) + g$$

195. Like the Constant Growth DCF model, the Two Stage Growth DCF model also calculates the cost of equity by using a dividend yield and a growth rate of a risk comparable company, except that the Two Stage Growth DCF uses a second, different growth rate after the first five years. The Two Stage Growth DCF accounts for situations where shortterm projected growth rates may not be expected in the long-run. The Two Stage Growth DCF addresses these potential limitations by utilizing two different growth rates: one for the short-term and one for a longer term, sustainable growth rate.

196. The Two Stage Growth DCF formula, as shown below, uses the short-term growth rate for the first five years, and the long-term growth rate in years six and beyond:

$$P = (D_1/(1+k)) + (D_1(1+g_1)/(1+k)^2) + (D_1(1+g_1)^2/(1+k)^3) + (D_1(1+g_1)^3/(1+k)^4) + (D_1(1+g_1)^4/(1+k)^5) + (D_1(1+g_1)^4(1+g_2)/(k-g_2) \times 1/(1+k)^5$$

197. The first five calculations represent the dividends in years one through five, growing at the first growth rate (g_1) discounted back to the present by using the required cost of equity (k). The sixth term is the stock price in year five, estimated as the dividend in year six divided by k minus the second growth rate, and likewise discounted back to the current year.

198. Using the DCF equations above, Ms. Bulkley calculated the dividend yield on the GP Proxy Group companies using stock price averages for three periods in time: 30 days, 90 days, and 180 days.

199. Ms. Bulkley explained that using 30-, 90-, and 180-day stock price averages: (1) ensures that the ROE is not skewed by anomalous events that may affect stock prices on any given trading day; and (2) ensures that the stock prices used are reasonably representative of expected market conditions over the long term. As an example, Ms. Bulkley cited a trade dispute between the U.S. and China that caused disruption in the markets in July and August 2019.

200. The results of Ms. Bulkley's Constant Growth DCF and Two Stage Growth DCF models for the GP Proxy Group is set forth below:

	Mean Low	Mean	Mean High
Constant Growth DCF (incl. flotation cost)			
30-Day Average	8.24%	9.91%	13.69%
90-Day Average	8.32%	9.98%	13.76%
180-Day Average	8.42%	10.08%	13.86%
Two-Stage Growth DCF (incl. flotation cost)			
30-Day Average	8.13%	9.69%	12.66%
90-Day Average	8.22%	9.76%	12.73%
180-Day Average	8.31%	9.86%	12.83%

201. Mr. Addonizio also used the Constant Growth DCF model and the Two Stage Growth DCF model to estimate GP's cost of equity using the DOC-DER Proxy Group.

202. Mr. Addonizio determined the expected dividend yield for each company in the DOC-DER Proxy Group using its current stock price and its most recent dividend, both of which are publicly documented.

203. Mr. Addonizio calculated the current stock price as the average of the closing stock price over the 30 trading days ending on December 9, 2019, a date corresponding with the timing of Mr. Addonizio's analysis. Mr. Addonizio reasoned that, because share prices can be volatile in the short run, it is better to use an average share price for a period of time long enough to avoid short-term aberrations in the market, but not too long so as to no longer reflect publicly available data.

204. Mr. Addonizio later updated the expected dividend yield for companies in the DOC-DER Proxy Group in his surrebuttal testimony by using the most recently available 30 trading days ending on February 12, 2020.

205. For the expected dividend growth rate for each proxy company, Mr. Addonizio used the three projected earnings growth rates (lowest, average, and highest) provided by three investment research services: Zacks Investment Research (Zacks), Value Line, and Thomson First Call (Thomson).

206. As part of this process, Mr. Addonizio performed a "high-level review" of all the projected earnings growth rates to identify any unreasonably high or low values. Mr. Addonizio identified one unreasonable growth rate: Value Line's 27 percent five-year growth rate for Northwest Natural. Mr. Addonizio concluded that Value Line's 27 percent growth rate was inappropriate to include in the DCF analyses because it was more than five times higher than the other two estimates for Northwest Natural and three times higher than the next highest single estimate for any of the other proxy companies.

207. Upon further investigation, Mr. Addonizio determined that Northwest Natural's earnings growth estimate was caused by its decision to "write off" a poorly performing asset in 2017, coupled with stable earnings in 2016, 2017, and 2018. Mr. Addonizio explained that the other earnings growth rates for Northwest Natural (provided by Zachs and Thomson) appear to account for this balance sheet change, and provide a more accurate estimate of the company's future earnings (5.00 percent and 3.75 percent, respectively).

208. Mr. Addonizio also addressed Spire's estimated earnings growth rate. Mr. Addonizio concluded that any concerns regarding Yahoo!'s estimated earnings for the company were mooted by a subsequent upwards adjustment.

209. Mr. Addonizio next performed a Two Stage Growth DCF analysis for each company. For the short-term growth rate, Mr. Addonizio used the five-year projected earnings growth rates that he used in the Constant Growth DCF analysis from Zacks, Value Line, and Thomson.

210. For the long-term growth rates, Mr. Addonizio first determined the likelihood for each company in the DOC-DER Proxy Group that its five-year projected growth rate is sustainable. According to Mr. Addonizio, growth rates may be considered "unsustainable" if they are unusually low or unusually high relative to the industry.

211. To make this assessment, Mr. Addonizio calculated the average growth rate for the DOC-DER Proxy Group and the standard deviation of the growth estimates. He determined that any growth rate that was lower than one standard deviation below the proxy group's average may not be sustainable and, similarly, any growth rate that is higher than one standard deviation above the proxy group's average growth rate may not be sustainable.

212. As part of his Two Stage Growth DCF analyses, Mr. Addonizio again performed a "high-level review" of his inputs. While the Two Stage Growth DCF model is intended to mitigate the effect of unsustainable growth rates, it is not robust against extreme outliers. According to Mr. Addonizio, Value Line's 27 percent growth estimate would have unreasonably inflated the group's average and its standard deviation, resulting in a much higher and much wider range of ROEs considered to be sustainable. Inclusion of Value Line's 27 percent growth estimate would have dramatically increased the recommended ROE for GP from 8.82 percent to 10.26 percent, before adjusting for flotation costs.

213. In sum, Mr. Addonizio's initial DCF results were as follows:

Summary of DOC-DER's DCF Initial Results (Adjusted for Flotation Costs)

Model	Mean Low ROE	Mean Avg. ROE	Mean High ROE
Constant Growth DCF	8.03%	8.95%	9.75%
Two-Growth DCF	8.04%	8.87%	9.75%

214. In February 2020, after filing his direct testimony, Mr. Addonizio reconfirmed that all of the DOC-DER Proxy Group companies continued to meet his eligibility criteria. He then updated the stock prices he used when calculating dividend yields and the dividend amounts for companies that changed their dividends since his first analysis. Mr. Addonizio also updated the growth estimates for some of the companies in the DER-DOC Proxy Group based on new data from Zacks and Thomson. (Value Line did not release new information after his first analysis so information from Value Line did not change).

215. Mr. Addonizio's updated analyses relied on the 30-day average stock prices ending February 13, 2020, which was near the highest point in the Dow Jones Industrial Average. Since that time, the market has experienced tremendous volatility due to a

U.S. trade dispute with China and panic associated with a worldwide pandemic (COVID-19).

216. Based on this updated information, Mr. Addonizio completed a revised and final DCF analysis for the DOC-DER Proxy Group, as follows:

Summary of DOC-DER's Final DCF Results (Adjusted for Flotation Cost)

Model	Mean Low ROE	Mean Avg. ROE	Mean High ROE
Constant Growth DCF	7.95%	8.79%	9.67%
Two-Growth DCF	7.90%	8.82%	9.67%

Ex. DER-9, CMA-S-2 through CMA-S-5 (Addonizio Surrebuttal)

217. Mr. Addonizio noted that the mean average ROE from his Constant Growth DCF and the Two Stage Growth DCF were now lower than in its initial analysis, going from 8.95 percent in the Constant Growth DCF to 8.79 percent; and from 8.87 percent in the Two Stage Growth DCF to 8.82 percent.

218. From the ranges identified in the updated DCF, Mr. Addonizio recommended a final ROE of 8.82 percent, including his flotation adjustment discussed below.

258. The Administrative Law Judge finds that the DCF conducted by the DOC-DER is more reliable than that presented by the Company.

259. First, the proxy group of companies selected by Ms. Bulkley contained two companies that were properly excluded by the DOC-DER for failing to meet the 60- percent operating income from natural gas distribution threshold: South Jersey and NiSource. The record establishes that, due to losses in the non-regulated segments of these business, the operating income for the regulated segments of these companies appear disproportionately large. To counteract this distortion, the DOC-DER recommended that GP use the absolute values of each segment's operating income or loss to calculate the total company amount, as well as the percentages attributable to each segment, to avoid this distortion. Applying this adjustment, these two companies would be excluded as not meeting the required 60 percent operating income threshold, which was applied by both Mr. Addonizio and Ms. Bulkley.

260. While Ms. Bulkley argued that these losses were due to one-time events for these companies, it is speculative to conclude that South Jersey and NiSource would exceed the 60 percent income threshold in the future. This is particularly true given that: (1) South Jersey's share of operating income from regulated operations had decreased even in the absence of the impairments cited by Ms. Bulkley as one-time events; and (2) significant uncertainty continues to surround NiSource following the natural gas

explosion. Moreover, the relevant question for determining suitability for inclusion in a proxy group is not whether the companies are likely to exceed the income threshold in the future, but rather whether the companies meet the income screens articulated by the analysts at the time of the analysis. Accordingly, both of these companies were properly excluded from the proxy group.

261. Second, Ms. Bulkley included NJ Resources in GP's Proxy Group despite its questionable creditworthiness. The S&P withdrew all of its credit ratings for NJ Resources on May 24, 2019. While its utility subsidiary, New Jersey Natural Gas, does have an investment-grade credit rating from Moody's, this rating is insufficient because it was not an issuer-level credit rating and is not directly applicable to NJ Resources. Issuer-level credit ratings are based on an entity's ability to "honor senior unsecured debt and debt like obligations." In contrast, Moody's investment grade credit rating for New Jersey Natural Gas is based on its ability to pay secured debt. Secured debt is less risky than unsecured debt and results in higher credit ratings, thereby overstating the subsidiary's creditworthiness. Moreover, it is unclear in the record whether the Moody's rating applied beyond a specific debt issuance by New Jersey Natural Gas made in conjunction with the New Jersey Economic Development Authority. Therefore, GP has failed to establish that NJ Resources met its own screen of having a "long-term issuer rating."

262. Third, unlike Mr. Addonizio, Ms. Bulkley used Value Line's 27 percent growth rate for Northwest Natural as part of her DCF analyses. Value Line's 27 percent earnings growth rate is five times higher than any other estimate for Northwest Natural and three times higher than the next highest single estimate for any other proxy company. As explained by Mr. Addonizio, this earnings growth estimate was caused by Northwest Natural's decision to write off a poorly performing asset in 2017, coupled with stable earnings in 2016, 2017, and 2018. As a result of this write-off, Value Line's 27 percent growth rate is inflated, is unrepresentative of Value Line's assessment of Northwest Natural's expected earnings growth, and is not suitable for use in a DCF analysis.

263. In sum, the inclusion of South Jersey, NiSource, and NJ Resources in GP's Proxy Group, as well as the use of an inflated earnings growth rate for Northwest Natural, render Ms. Bulkley's DCF analyses less reliable than the DCF analysis performed by the Department. The Administrative Law Judge, therefore, recommends that the Commission rely on the range of DCF results supplied by the DOC-DER over those presented by GP.

D. Supporting and Corroborating Analysis – Capital Asset Pricing Model, Bond Yield Plus Risk Premium, and Expected Earnings Method

Great Plains provided three supporting models to bolster its requested Return on Equity, The Capital Asset Pricing Model, the Bond Yield Plus Risk Premium, and the Expected Earnings Method. The Department used only the Capital Asset Pricing Model, and provided several criticisms of the Bond Yield Plus Risk Premium and Expected Earnings Method, both

in terms of theory and implementation. The Department also challenged certain aspects of Great Plains' implementation of the CAPM.

1. Capital Asset Pricing Model

The CAPM depends on the basic premise that company-specific risk can be diversified away by investors. Therefore, it is 'systemic' risk of the stock, the risk of the stock in the context of the entire market, that matters to investors. This systemic risk is measured by "beta", a widely reported measure of the volatility of a stock in terms of the volatility of the overall market. The formula for the CAPM, in its most basic form, is:

$$k = r_f + \text{beta}\ (r_m - r_f)$$

where:
k is the required rate of return
r_f is the rate of return on a riskless asset
r_m is the market rate of return
$(r_m - r_f)$ is the market risk premium

Beta, essentially, shows how far a stock would be expected to move in price in response to an overall market move. For example, if Beta is 1, the stock price will move more or less in tandem with the overall market. If it is greater than 1, the stock price will move more than the overall market price. If it is less than 1, it will move less. If it is zero, it is uncorrelated with the market, and if it is less than 0 (i.e. negative) it will move against the market – a general increase in market share prices would result in this stock dropping in price, and vice-versa. Utility stocks generally have a beta less than 1, but greater than 0 – that is, they move with the markets, but less dramatically. This implies that, as a general rule, the required rate of return on a utility stock is less than that of the overall stock market, as they are generally safer (but also less lucrative) investments than stocks in companies more exposed to competitive forces.

Calculation of the risk-free rate of return is the most disputed issue in the CAPM for this case. The Department used a simple 30 day average of the bond yield of the 20 year Treasury bond. The Department argued that using the 20-year bond provides a better measure of a 'safe' asset then, say, a 90 day bond, and ties up money for a shorter period (another source of risk) than a 30-year bond.

Great Plains used three separate metrics to reach a risk-free rate. First, they used a 30 day average of 30 year (instead of 20 year) treasury bond yields. Great Plains then used two 'projected' yields – the average projected 30-year US Treasury bond yield for Q4 2019 to Q4 2020, and the average projected 30-year US Treasury bond yield for 2021 through 2025, both drawn from "Blue Chip Financial Forecasts". Great Plains argues that projected US Treasury bond yields should be used instead of current historical bond yields, as the CAPM is intended to be forward looking, and should reflect what invested expect risk free returns to look like, rather than what they have been like in the past.

The Department argues in testimony that forecasted interest rates are generally unreliable, and specifically are inferior to current interest rates for estimating future interest rates. The Department states that it is misleading to describe a 30 day average of interest rates as 'historical', citing financial theory (which holds that current interest rates generally reflect future expectations by investors) and empirical literature (which shows that particular methods of forecasting rates are inferior to simply using current rates) as justification for using a current interest rate rather than a future one. The Department specifically argues that Blue Chip Financial Forecasts has consistently overestimated Treasury yields in its forecasts for the past decade or so. [16]

The utility uses two metrics of "Beta" for Great Plains. For each member of the proxy group described above, Great Plains pulls the beta calculated by Bloomberg and Value Line. The Bloomberg estimates are generally (though not universally) slightly higher than the Value Line estimates.

The Department uses the Value Line estimates for Beta.

Both Great Plains and the Department based their market rate of return r_m, on the S&P 500 index. Great Plains calculated expected return using the Constant Growth DCF for all S&P 500 companies for which dividend yields and long-term earnings projections are available.

The Department uses estimated 3-5 year earnings growth for the holdings of an Exchange Traded Fund (ETF) managed by State Street Global Advisors that is designed to mimic the S&P 500. It draws the average dividend for its DCF analysis directly from S&P.

Great Plains questioned the use of the State Street Global Advisors forecast of earnings growth for its ETF rather than using S&P's own forecasts. The Department argues that the State Street has 'shown its work' by citing its growth rates for individual stocks to well respected investor services, while S&P 500 did not specifically cite sources.

Table 2-8 Capital Asset Pricing Model Results

Beta Source	Great Plains Direct	Department Direct	Great Plains Rebuttal	Department Surrebuttal
Value Line	10.08%	8.9%	9.41%	9.38%
Bloomberg	10.53%		9.88%	

2. Bond Yield Plus Risk Premium Model

Great Plains provided a Bond Yield Plus Risk Premium model as additional support for its recommended Return on Equity. The Bond Yield Risk Premium model relies on the concept

[16] Addonizio Surrebuttal Page 47.

that equity ownership is riskier than bond ownership, and as such equity ownership should receive a risk premium added to the return on bonds.

This model requires two parts – the Bond Yield (already available as the 30 year Treasury Yield) and a risk premium. This risk premium is based on the historical returns on equity awarded nationwide in 617 general rate cases for gas rates from 1992 to July 2019. A key aspect of this analysis is that Great Plains found that the risk premium in natural gas general rate cases has been inversely related to the risk-free interest rate. In order to estimate the risk premium required for Great Plains, the Company conducted a regression analysis of historical rate case Returns on Equity using the following equation:

$$RP = a + b(T)$$

Where
RP is Risk Premium (calculated as ROE – T)
a is a constant term
b is the slope
T is 30-year US Treasury bond yield at the time of the decision.

Great Plains found there was a significant negative relationship between risk premium and 3 year Treasury yield. Specifically, they found that a solution where

$$RP = 0.0839 – 0.5535 \times T$$

explains 81.84% of variation in risk premiums awarded during rate cases.

Depending on the Treasury Yield used, this method results in a ROE of 9.53% to 9.99%, depending on whether current 30 day Treasury Yield, near-term forecast Treasury Yield, or longer-term forecast Treasury Yield is used.

The Department objected to this methodology on several grounds. First, this approach is backwards looking, both in the regression methodology, and the data used to derive the risk premium, which includes rate cases as far back as 1992. Second, the method assumes that risk premium is affected only by interest rates, and not by changing laws, economic environments other than interest rates, and changing government policies.

Third, the Department again objected to using forecasted interest rates, and noted that the higher long-term forecasted interest rate resulted in an ROE over 45 basis points higher than using the 30-day average Treasury rate. The Department believe, similarly to in the CAPM case above, that forecasted interest rates carry too much uncertainty to be given significant weight in evaluating ROE from more established methodologies such as DCF.

3. Expected Earnings Analysis

The Expected Earnings Analysis provided by Great Plains is a comparable earnings analysis that calculates the earnings that an investor expects to receive on the book value of a stock. It is a forward-looking estimate of investors' expected returns. Great Plains cited the use of the methodology at FERC (Docket No. EL 11-66-001) and in Washington state (Docket Nos. UE-170485 and 170486) in support of its use.

This analysis takes projected ROE for the 2022-2024 time period, total capital for 2018 and projected for 2022-2024, and projected equity ratio for 2018 and 2022-2024, and uses those figures to calculate an "Adjusted Return on Common Equity". This methodology resulted in a median ROE of 10.59% and a mean ROE of 10.9%.

The Department objects to the use of the Expected Earnings Analysis. The Department notes that this Commission has never relied on this methodology as far as the Department witness Addonizio is aware. Great Plains provides no supporting documentation in direct testimony for the method. The Department cited FERC Opinion 569 on November 21, 2019 as rejecting this methodology. According to FERC, because investors must invest at prevailing market prices rather than book value of its stock, estimates of rates of return on the book value of the proxy companies do not reflect returns available to investors, and thus a utility's cost of equity. FERC found that "relying on the Expected Earnings model would not satisfy the requirements of *Hope*."[17]

4. ALJ Findings – Supporting Methodologies

The ALJ generally supported the findings of the Department's CAPM and puts little weight on the Expected Earnings and Bond Yield Plus Risk Premium models. The ALJ found the Department's criticisms of forecasted interest rates persuasive and agreed with the Department that the Bond Yield Plus model is backwards looking, rather than prospective, and that the Expected Earnings model is misapplied by Great Plains. The Expected Earnings model is intended to investigate return on book value of stock rather than stocks at share prices, and investors almost never can purchase stock at book value.

The ALJ provided the following Proposed Findings for the supporting models:

219. Both Ms. Bulkley and Mr. Addonizio used other analytical tools to perform "checks" on the results they obtained from their respective DCF models. Mr. Addonizio used only the Capital Asset Pricing Model (CAPM). Ms. Bulkley used the CAPM, the Bond Yield Plus Risk Premium, and the Expected Earnings methods for comparing her DCF results.

220. CAPM's basic premise is that any company-specific risk can be diversified away by investors. Therefore, under this theory, the only risk that matters is the stock's systematic risk, which is measured by a beta (a market risk premium). The required rate of return on the stock is calculated as the sum of the stock's beta, multiplied by the

[17] Opinion No. 569, Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. System Operator, Inc v. ALLETE, Inc., 169 FERC Line 61,330.

market risk premium and the rate of return on a "riskless" asset. It is expressed in the following formula:

$$k = r_f + \text{beta } (r_m - r_f)$$

where:

k is the required rate of return
r_f is the rate of return on a riskless asset
r_m is the market rate of return
$(r_m - r_f)$ is the market risk premium

a. Department CAPM Analysis

221. Using the CAPM method and formula, Mr. Addonizio conducted an analysis to determine if his DCF results were similar results obtained by CAPM.

222. The first input into the CAPM formula is the rate of return on a riskless asset (r_f). A 30-year U.S. Treasury bond is generally considered to be devoid of default risk. However, when applying the CAPM analysis, Mr. Addonizio used for the (r_f) the rate of return on a 20-year U.S. Treasury bond, as opposed to a 30-year bond. According to Mr. Addonizio, a 20-year bond better approximates an equity investor's stock holding period (when compared to a 90-day bond), and requires less time for an investor to be "tied up" in the investment (when compared to a 30-year Treasury bond). Additionally, he used the average yield over the last 30 trading days prior to his analysis to eliminate any bias from day-to-day volatility.

223. The second input into the CAPM formula is the market rate of return (rm). To determine the market rate of return, it is necessary to select a market portfolio. Once a market portfolio is selected, the required return on that portfolio can be estimated. In this case, Mr. Addonizio used the S&P 500, a common choice for CAPM analyses, as a proxy for the market portfolio. State Street Global Advisors manages an exchange-traded fund (ETF) designed to mimic the S&P 500 Index, and reports an estimated 3-to-5-year earnings growth rate for the holdings of the ETF that it calculates using equity analysts' earnings estimates for the companies included in the ETF. Mr. Addonizio used this earnings growth estimate as the estimate of the growth rate for the market portfolio, which was 10.75 percent as of January 1, 2020.

224. The CAPM also requires the calculation of a dividend yield. According to Mr. Addonizio, the dividend yield for the S&P 500 as of January 1, 2020, was 1.77 percent. Similar to the dividend yields used in his DCF analysis, Mr. Addonizio applied a half years' worth of growth to this dividend yield, resulting in a dividend yield of 1.87 percent. Thus, Mr. Addonizio determined that the required rate of return on the S&P 500 is 1.87 percent + 10.73 percent = 12.62 percent. Mr. Addonizio used this return as the market rate of return (r_m).

225. The third input into the CAPM formula is the estimated "beta" for the target company. The beta is a measure of the volatility – or systematic risk – of a security or portfolio compared to the market as a whole.

226. Mr. Addonizio relied on the beta estimate provided by Value Line for each of the companies in the DOC-DER Proxy Group. An average of these betas produced a beta figure of 0.64.

227. Using the CAPM formula described above, Mr. Addonizio initially calculated GP's required rate of return as 8.90 percent, including a flotation cost adjustment of five basis points (flotation costs are discussed, in detail, later in this Report). This CAPM result fell within the range of Mr. Addonizio's initial DCF results (8.03 to 9.75 percent) and was nearly identical to his initial Two Stage Growth DCF result (8.95 percent). Consequently, Mr. Addonizio determined that his initial DCF results were reliable and recommended a ROE of 8.87 percent based upon a mean ROE of 8.82 percent plus five basis points for flotation costs.

228. However, as set forth above, as part of his rebuttal analysis, Mr. Addonizio updated his CAPM analyses with more current estimates of the risk-free rate and the rate of return on the market portfolio. With this new data, Mr. Addonizio re-ran his CAPM analysis against his final DCF results. His updated CAPM analysis resulted in an estimated ROE of 9.38 percent, including flotation costs of five points. This result, too, falls within the ROE range Mr. Addonizio developed with his final DCF analysis (7.90 to 9.67 percent), however it is 56 basis points higher than his final DCF recommended ROE of 8.82 percent.

229. Nonetheless, based upon his CAPM analysis, Mr. Addonizio concluded that his DCF results were reasonable because the CAPM result fell within the mean high and mean low range of this final DCF. Despite the CAPM being significantly higher than his final DCF mean recommendation, Mr. Addonizio's final ROE recommendation continues to be 8.82 percent, based upon his final Two Stage Growth DCF analysis.

b. Great Plains' CAPM, Bond Yield Risk Premium Analysis, and Expected Earnings Analysis

231(sic)[18]. Ms. Bulkley conducted three "checks" on her DCF results. She conducted a CAPM, a Bond Yield Risk Premium analysis, and an Expected Earnings analysis.

232. In her CAPM, Ms. Bulkley relied on three sources for the rate of return on a riskless asset (r_f): (1) the 30-day average yield on 30-year U.S. Treasury bonds (2.57 percent); (2) the average projected 30-year U.S. Treasury bond yield for Q4 2019 through Q4 2020 (2.66 percent); and (3) the average projected 30-year U.S. Treasury bond yield for 2021 through 2025 (3.6 percent). She placed most weight on the projected yields of the 30-

[18] From FOF 231 to 300, the numbering is correct.

year Treasury bond. In other words, Ms. Bulkley relied upon forecasted yields to determine the risk-free rate, as opposed to the known 30-year U.S. Treasury bond rate.

233. Ms. Bulkley then used the beta coefficients for the GP Proxy Group companies as reported by Bloomberg and Value Line, and selected a 10-year period to calculate the beta coefficients from Bloomberg.

234. Ms. Bulkley estimated the market risk premium based on the expected return on S&P 500 Index, less the yield premium on the 30-year Treasury Bond. Using the DCF model, she calculated the expected return on the S&P 500 Index companies for which dividend yields and long-term earnings projections were available. Based on an estimated market capitalization-weighted dividend yield of 1.94 percent and a weighted long-term growth rate of 11.84 percent, she determined that the estimated market return for the S&P 500 Index was 13.90 percent.

235. Mr. Addonizio reviewed Ms. Bulkley's estimate of the required market return and choice of beta, and concluded that it appeared reasonable.

236. Ms. Bulkley's CAPM analysis produced a range of returns from 10.08 percent to 10.84 percent, as set forth below:

Great Plains' CAPM Results

	Bloomberg Beta	Value Line Beta
Current Risk-Free Rate (2.57%)	10.53%	10.08%
Q4 2019-Q4 2020 Projected Risk-Free Rate (2.66%)	10.56%	10.11%
2021-2025 Projected Risk-Free Rate (3.60%)	10.84%	10.43%
Mean Result	**10.64%**	**10.20%**

237. Mr. Addonizio noted that Ms. Bulkley's CAPM analyses produced a required market return estimate of 13.90 percent, in contrast to Mr. Addonizio's own estimate of 12.92 percent, even though both experts used similar approaches and relied on respected datasets.

238. Ms. Bulkley next conducted a Bond Yield Plus Risk Premium analysis.386 This approach is based on the principle that equity investors bear the residual risk associated with equity ownership and, therefore, require a premium over the return they would have earned as a bondholder. In other words, because returns to equity holders have greater risks than returns to bondholders, equity investors should be compensated for that risk. The risk premium approach, thus, estimates the cost of equity as the sum of the equity risk premium and the yield on a particular class of bonds.

239. To conduct this approach, Ms. Bulkley used historical data going back to 1992 to estimate the historical relationship between the equity risk premium for gas utilities and the yield on 30-year U.S. Treasuries.390 She then derived an estimate of the current equity risk premium by applying that historical relationship to current 30-year Treasury yields, as well as two forecasts of 30-year Treasury yields

240. Ms. Bulkley's Bond Yield Plus Risk Premium resulted as follows:

GP's Bond Yield Plus Risk Premium Results

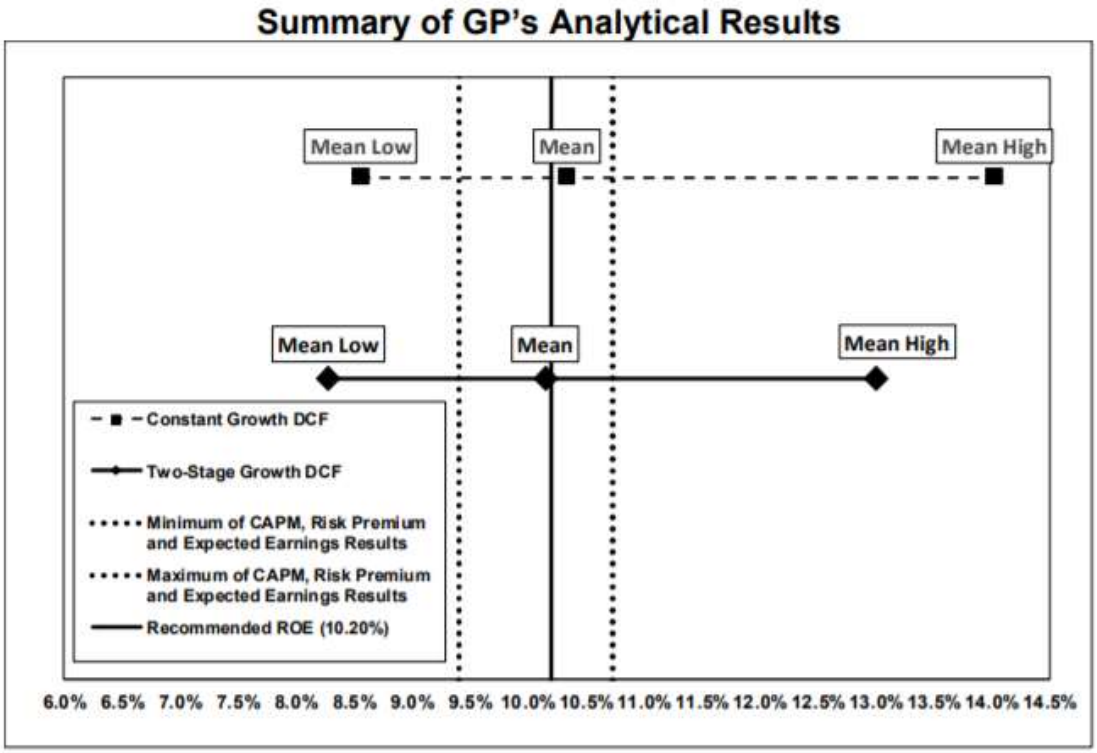
	Risk Premium	Estimated ROE
Current Risk-Free Rate (2.57%)	6.97%	9.53%
Q4 2019-Q4 2020 Projected Risk-Free Rate (2.66%)	6.91%	9.57%
2021-2025 Projected Risk-Free Rate (3.60%)	6.39%	9.99%

241. Finally, Ms. Bulkley conducted an Expected Earnings analysis. An Expected Earnings methodology is a comparable earnings analysis that calculates the earnings that an investor expects to receive on the book value of a stock. The use of this approach, based on the GP's proxy companies, provided a range of expected returns on the proxy groups companies, which is then translated to GP.

242. In her analysis, Ms. Bulkley relied primarily on the projected ROE capital for the proxy companies as reported by Value Line for the period from 2022 to 2024. The projected ROEs were then adjusted to account for the fact that the ROEs reported by Value Line are calculated on the basis of common shares outstanding at the end of the period, as opposed to average shares outstanding over the period.

243. Ms. Bulkley's Expected Earnings Approach resulted in a mean ROE of 10.90 percent and a median ROE of 10.59 percent.

244. Ms. Bulkley then compared her DCF results with the other three analytical approaches in the following table:



264. The Administrative Law Judge also finds that the Department's CAPM analysis is more reliable than the CAPM performed by GP. The DOC-DER's CAPM analysis used the established 20-year Treasury bond yield. Whereas, Ms. Bulkley relied mostly on forecasted (verses established) bond yields to determine the risk-free rate.

265. Long-term interest rates, including yields on Treasury bonds, are determined by market forces. In this way, current bond yields reflect investor expectations about future economic and financial conditions. Because current bond yields reflect expected future developments, any changes to bond yields in the future will necessarily reflect the predictions that cause investors to adjust their expectations. Forecasted bond yields suffer from the uncertainty that they are attempting to predict unanticipated future events. If these future developments were anticipated, then current bond yields would already reflect these anticipated changes. Accordingly, the ALJ finds that long-term forecasted bond yields are subject to too much uncertainty and the ROE estimates produced with them are thus less reliable than a CAPM using established rates.

266. The Administrative Law Judge concurs with Mr. Addonizio that the Bond Yield Plus Risk Premium analysis used by GP is not as sound of a method of determining ROE than the DCF or CAPM because it is backward looking, rather than forward-looking. The Bond Yield model assumes that the relationship between the equity risk premium for gas distribution utilities and treasury yields does not depend on investors adjusting their expectations depending on different economic and financial conditions, such as changing federal monetary and fiscal policies.

267. In addition, Ms. Bulkley used forecasted interest rates in her Bond Yield Plus Risk Premium analysis, like she did in her CAPM. As set forth above, these forecasted interest rates are subject to more uncertainty and are, thus, inferior to current interest rates as predictors of future interest rates. Accordingly, the Administrative Law Judge gave little weight to the results of GP's Bond Yield Plus Risk Premium analysis.

268. The Administrative Law Judge also gives little weight to the Expected Earnings methodology used by GP to estimate ROE. The Expected Earnings methodology is an accounting-based methodology, not a market-based one. It estimates a rate of return on the book value of a company's equity. However, investors cannot purchase shares of common stock at their book value. Investors must pay the current market value for shares.

269. The Federal Energy Regulatory Commission (FERC) has recently determined that the Expected Earnings Methodology is inappropriate for determining ROE. FERC explained, "The Expected Earnings methodology provides an accounting-based approach that uses investment analyst estimates of return . . . on book value[.]" FERC concluded: In particular, we find that the record does not support departing from our traditional use of market-based approaches to determine base ROE. Under the market-based approach, the Commission sets a utility's ROE to equal the estimated return that investors would require in order to purchase stock in the utility at its current market price. In Hope, the Supreme Court explained that "the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks." . . . . The return on book value is also not indicative of what return an investor requires to invest in the utility's equity or what return an investor receives on the equity investment, because those returns are determined with respect to the current market price that an investor must pay in order to invest in the equity.

270. In this way, FERC reasoned that it would be illogical to set ROE based on book value when actual equity investment must be made at the company's current market price. For these same reasons, the Administrative Law Judge gives the Expected Earnings analysis little weight.

271. In sum, the Administrative Law Judge gives significant weight to the DOCDER's CAPM results of 9.38 percent. This amount is squarely within the range of DCF results in both Mr. Addonizio's initial and final DCF analyses (ranging from 8.03- 9.75 percent and 7.90 – 9.67 percent, respectively), falling closing to the high mean range.

272. It is also more consistent with Ms. Bulkley's application of Mr. Addonizio's DCF analysis when applied to GP's Proxy Group (which included the three companies excluded by Mr. Addonizio). Using Mr. Addonizio's methodology for DCF, but applied to GP's larger proxy group, would result in a Two Stage Growth DCF mean result of 9.47 percent before the application of flotation costs, and 9.52 percent after the addition of Mr. Addonizio's recommended flotation costs of five points.

273. When using the GP Proxy Group and adjusting the Value Line earning growth rate for Northwest Natural, as recommended by Mr. Addonizio, the mean TwoGrowth DCF is 9.58 percent before the addition of flotation costs, and 9.63 percent after the addition of five basis points flotation costs. In other words, applying Mr. Addonizio's methodology to GP's Proxy Group nets results closer to Mr. Addonizio's CAPM than his own Two Stage Growth DCF results for the DOC-DER Proxy Group.

5. Exceptions to ALJ Recommendations – CAPM and supporting models

Capital Asset Pricing Model

The Department notes that prior Commission decisions have recognized that the CAPM requires "expert judgement at nearly every turn-determining the term of the risk-free, interest bearing investment used as a benchmark, determining the time frame for calculating growth rates, determining the beta that represents market volatility, [and] determining the historical periods over which to measure returns".[19] The Department notes that due to the cumulative effect of all of these judgments, the Commission has "historically placed its heaviest reliance" on the DCF model.[20]

The Department requests that Finding of Fact 271 be amended as follows:

271. In sum, the Administrative Law Judge finds that ~~gives significant weight to~~ the DOC-DER's CAPM results of 9.38 percent confirms the reasonableness of its DCF results because it ~~This amount~~ is squarely within the range of DCF results in both Mr. Addonizio's initial and final DCF analyses (ranging from 8.03-9.75 percent and 7.90 – 9.67 percent, respectively), ~~falling closing to the high mean range~~.

E. Qualitative Evaluation of the Rate of Return

The Company requested Return on Equity of 10.2% takes into account several factors which Great Plains argues should justify higher a higher return on equity than the Discounted Cash Flow model or other supporting models would suggest. Great Plains argues that its small size, highly concentrated customer base, and dependence on a limited number of industries in its customer basis all call for the Commission to consider a higher Return on Equity.

[19] *In re Application of Minnesota Energy Resources Corporation for Authority to Increase Rates for Natural Gas Service in Minnesota*, MPUC Docket No. G-011/GR-17-563, FINDINGS OF FACT, CONCLUSIONS, & ORDER (Dec. 26,2018).

[20] *In re Application of CenterPoint Energy Resources Corporation d/b/a CenterPoint Energy Minnesota Gas for Authority to Increase Natural Gas Rates in Minnesota*, MPUC Docket N. G-008/GR-15-424, FINDINGS OF FACT, CONCLUSIONS, & ORDER at 38 (June 3, 2016).

1. Small Size Risk

Great Plains argues that its small size justifies a higher rate of return. Great Plains asserts that financial and academic communities accept the proposition that smaller utilities have inherently higher risks than those faced by larger companies. As such, Great Plains should receive a higher return on equity than the proxy group of larger companies would imply.

Great Plains cites the case of Otter Tail Power Company in Docket No. E017/GR-15-1033. In that case, the Commission selected a ROE above the mean DCF result, as a result of several factors, including small size. The Commission stated:

> The record in this case establishes a compelling basis for selecting an ROE above the mean average within the DCF range, given Otter Tail's unique characteristics and circumstances relative to other utilities in the proxy group. These factors include the company's relatively smaller size, geographically diffuse customer base, and scope of the Company's planned infrastructure improvements.

Great Plains notes that its customer base is approximately 1/3 of Otter Tail's, and its Net Plant is $30.6 million, against $711.9 million for Otter Tail.

2. Service Territory Risk

Great Plains is dependent on commercial and industrial deliveries, overwhelmingly agricultural in nature, for 82.9% of its total natural gas sales. This is higher than any other member of the proxy group. Highly concentrated customer bases can be a source of risk for a company which requires a higher ROE to attract investment. Great Plains also faces a risk due to the possibility that its large agricultural customer base could switch to alternate sources of fuel.

Great Plains uses these risks to justify its revenue decoupling program as well as a higher rate of return, and notes that the revenue decoupling does not fully protect Great Plains against risks from its small, concentrated service territory.

The Department argues that Great Plains does not have a risker profile than the proxy group. The Department cites a 2002 academic literature review[21] which finds that small-size effects in the utility industry appears to have ceased to exist in the 1980s. Therefore, if it ever was relevant, it no longer is. The Department specifically argues that small-size effects were always more of an issue for competitive firms rather than regulated ones, since regulated firms have protections (such as cost-based ratemaking, protection from competition, and revenue decoupling) that protect it from size-based risks.

[21] Mario Levis, *The Record on Small Companies: A review of the Evidence*, 2 J. of Asset Management, 368, 369 (2002) Ex. DER-1, CMA-22, at 2.

The Department also notes that the Commission based its decision in Otter Tail in part on factors such as reliable service, reliable completion of major infrastructure projects under budget, and high customer service metrics[22].

3. ALJ Recommendation – Subjective Factors

The ALJ generally agreed with Great Plains on the risks of its small size and concentration. The ALJ specifically called out the research cited by Great Plains, and noted that the 8.82% recommendation by the Department was significantly lower than the ROE which has been approved in recent years nationally for other gas utilities, even of larger size and more diverse risk profiles.

The ALJ provided the following proposed findings in support of selecting a higher Return on Equity

245. In addition to the DCF, CAPM, Bond Yield Risk Premium method, and Expected Earnings analysis, Ms. Bulkley considered certain qualitative risk factors to reach a final ROE from the range of ROE result set forth in the table above. Specifically, Ms. Bulkley considered GP's business and financial risk relative to the companies in her proxy group. Ms. Bulkley refers to this analysis as reviewing GP's "risk profile."

246. While Ms. Bulkley did not articulate specific adjustment to her recommended ROE for GP based on these factors, she considered them in aggregate in determining where, within the range of results, the authorized ROE for GP should be set.

247. Specifically, Ms. Bulkley considered GP's size, customer concentration, capital expenditures, and regulatory environment when reaching her final ROE decision. Based on these risk factors, Ms. Bulkley made an upward adjustment to recommend a final ROE of 10.2 percent.

248. First, Ms. Bulkley asserts that GP is riskier than the proxy group companies because of its small size. GP serves approximately 22,000 customers and had net plant capital expenditures of approximately $30.6 million in 2018. As a result, its operations were substantially smaller than the median for the proxy group companies in terms of market capitalization.

249. Citing scholarly work, Ms. Bulkley explained that small utilities, like GP, face obstacles that larger utilities do not face, including a smaller customer base, limited financial

[22] *In the Matter of the Application of Otter Tail Power Company for Authority to Increase Rates for Electric Service in Minnesota*. MPUC Docket No. E-017/GR-15-1033, FINDINGS OF FACT, CONCLUSIONS, AND ORDER at 55 (May 1, 2017) ("The Commission has . . . considered Otter Tail's recognized . . . performance in completing major infrastructure projects substantially under budget, its history of providing reliable service with stable rates, and its record of effectively serving the needs of its customers, as measured by multiple customer-satisfaction metrics.").

resources, and a lack of diversification of customers, energy sources, and geography. As a result, a smaller utility is less able to withstand adverse events that affect its revenue and expenses, such as weather variability, the loss of a large customer, or reduced demand. In addition, capital expenditures can have a greater proportional effect on customers. As a result of these risks, Ms. Bulkley argues that small utility investors expect a higher return on their investment to justify the additional risks. Based upon its small size, Ms. Bulkley asserts that the Commission should approve a ROE above the mean results for the proxy group.

250. Second, Ms. Bulkley concluded that GP is subject to greater risk than other companies in her proxy group because of its reliance on commercial and industrial customers. Located in western Minnesota, most of GP's industrial customers are in the agricultural industry. Approximately 60.94 percent of its 2017 deliveries were derived from industrial customers, with the majority of those based or related to agriculture or ethanol production. Compared to the GP Proxy Group, GP's commercial and industrial gas deliveries totaled 82.90 percent of its business, which was higher than all of the companies in the proxy group. Indeed, 60.94 percent of its total gas deliveries in Minnesota were to industrial customers.

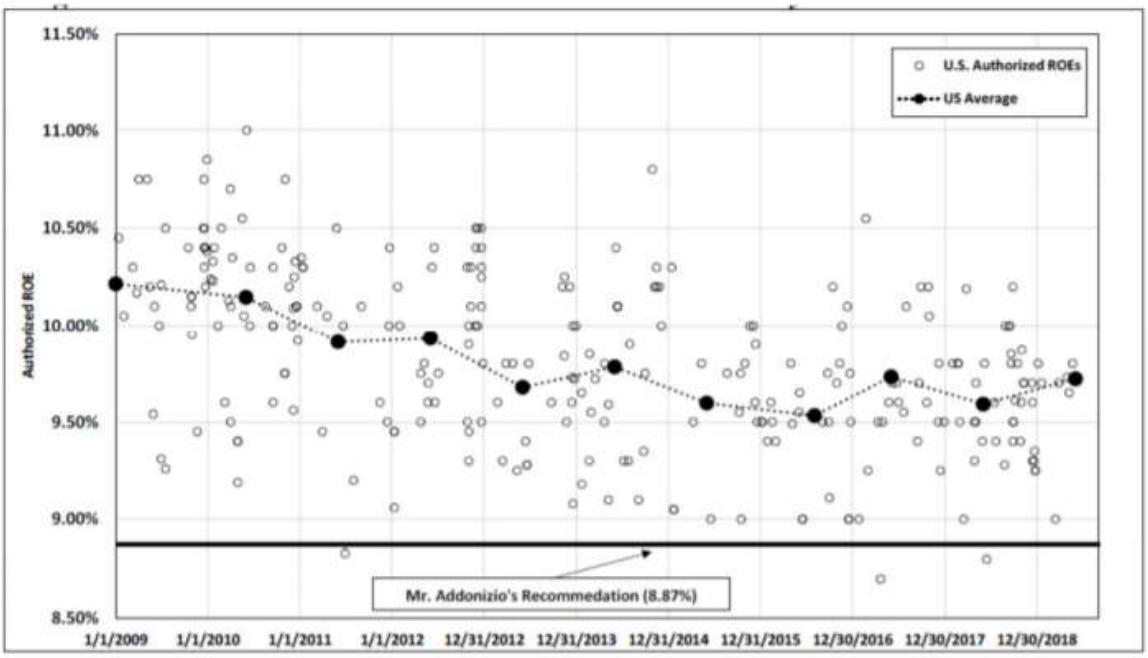
251. The extremely high concentration of industrial customers results in higher business risks for GP. Because industrial/agricultural customers are large, they can present a significant part of GP's business. Should such a customer go out of business, it could have a significant impact on GP's overall business.

252. GP's major industrial customers are engaged in industries such as grain drying/storage, sugar beet processing, ethanol production, and other agricultural processes. Commodity price volatility and trade disputes have a direct impact on these customers. These national and international economic conditions could, therefore, have an appreciable impact on GP's business should these industrial customers reduce consumption due to negative economic conditions.

253. A high degree of customer concentration increases GP's risk related to customer migration, changes in economic conditions, and competition. This risk is even higher in GP's service territory because the residential and commercial customers rely on the success of the industrial customers in the area for sales and employment.

254. Finally, Ms. Bulkley considered the DOC-DER's recommended ROE (8.82 percent) against the authorized returns for natural gas utilities in other jurisdictions since January 2009, as well as the returns authorized in Minnesota for natural gas companies. The chart below summarizes her findings:

Comparison of Minnesota and U.S. Authorized Natural Gas Returns



255. According to Ms. Bulkley, from 2009 through 2011, the Commission's authorized ROEs were at or near the average authorized return on equity for the U.S. However, beginning in 2012 through 2016, the Commission's authorized ROEs were below the U.S. average. Ms. Bulkley opined that this may be the result of the Commission's reliance on the DCF as a method for determining ROE. Ms. Bulkley noted that the Commission recently authorized a ROE of 9.70 percent for MERC in Docket No. G011/GR-17-563, which was consistent with the national average for natural gas companies in the U.S. According to Ms. Bulkley, the result in MERC was the result of the Commission relying on the Two Stage Growth DCF, other analytical approaches, and other contextual data, and not just the DCF.

256. Mr. Addonizio's final recommended ROE of 8.82 percent is at the very low end of the range of authorized ROEs and well below the average annual authorized ROE for natural gas utilities from 2009 through 2019. In fact, it is less than all but two other authorized ROEs for natural gas utilities between 2009 and 2019.

257. Ms. Bulkley opined that, based upon her DCF and other analyses, and in recognition of the Company's small size, its heavy reliance on a small number of industrial customers, and its need to compete for capital, a reasonable ROE in this case should be in the range 9.75 and 10.25 percent. From this range, she ultimately recommended a ROE of 10.2 percent ROE for GP.435

ALJ Analysis - Qualitative Risks and National ROEs Support an Upward Adjustment in ROE

274. In addition to her DCF, CAPM, and other quantitative analyses, Ms. Bulkley undertook a qualitative review to determine a final ROE within the range of ROE results indicated in her mathematical analyses. She described this as reviewing GP's "risk profile." Specifically, Ms. Bulkley considered GP's small size, its customer concentration, capital expenditures, and regulatory environment when reaching her final ROE decision from the range of results presented in her quantitative analysis. Mr. Addonizio did not engage in this type of additional analysis and simply selected the mean ROE from his Two-Stage DCF equation.

275. When deciding on a ROE within a range identified by the quantitative methods described herein (DCF, CAPM, etc.), is reasonable to look to qualitative factors that may justify an upward or downward departure from the mean quantitative results. For example, a company with a history of service issues or financial mismanagement should not be rewarded with an upward departure of ROE from that suggested by the quantitative economic analyses. At the same time, companies that face additional obstacles or risks from their publicly-traded proxy group counterparts may be entitled to an upward departure to ensure that they are able to raise capital in the competitive market, in light of such additional risks. There are some risks or factors that are simply not captured by a mathematical equation or quantitative analysis. This is particularly true when comparing a small, non-publicly traded company to a large, publicly-traded company.

276. The record in this proceeding shows that Great Plains is, in fact, significantly smaller than the publicly-traded proxy companies used in the experts' DCF analyses. Unlike large, publicly-traded companies, small utilities are less able to withstand adverse events that affect their revenue and expenses, such as weather variability, the loss of a large customer, or reduced demand.

277. In addition, GP has risk related to the concentration of industrial customers in its service territory focused on agriculture or the production of ethanol. Located in western Minnesota, GP is highly dependent upon its industrial/agricultural customer base, which represents 60.94 percent its 2017 deliveries. Its residential and commercial customers are also dependent on that same industrial base. Consequently, economic events that impact these agricultural and ethanol producers inevitably impact GP's entire customer base.

278. The Commission recently determined that it is necessary to account for differences in investment risk between the proxy group and the utility for which the return is being set. In its May 2017 Order addressing Otter Tail Power Company's ROE, the Commission found that the higher business risks faced by Otter Tail (which included small size, equity price volatility, low institutional ownership, and trading volume), relative to the proxy group companies, supported a return above the mean DCF results. The Commission stated: The record in this case establishes a compelling basis for selecting an ROE above the mean average within the DCF range, given Otter Tail's unique characteristics and circumstances relative to other utilities in the proxy group. These factors include the

company's relatively smaller size, geographically diffuse customer base, and the scope of the Company's planned infrastructure investments. The Commission has also considered Otter Tail's recognized [sic] the Company's performance in completing major infrastructure projects substantially under budget, its history of providing reliable service with stable rates, and its record of effectively serving the needs of its customers, as measured by multiple customer satisfaction metrics.

279. In other contexts, the Commission has determined that while the "midpoint is relevant evidence, of course, and can serve as a useful touchstone," it is "not invariably the best measure of the return required to permit a utility to attract capital at reasonable rates, to maintain its credit rating and financial integrity, and to provide returns commensurate with those earned on other investments with equivalent risks."=

280. The Administrative Law Judge finds that the mean Two-Stage DCF results presented by the DOC-DER is not the sole measure of the return for GP. Rather, such DCF results, while solidly supported, must be viewed in comparison to: (1) the Department's own CAPM results of 9.38 percent; (2) the unique qualitative risks GP has compared to the proxy group companies; (3) and the competitive investment market in which it operates.

281. The record establishes that a ROE of 8.82 percent, as recommended by Mr. Addonizio, would be below all but two authorized ROEs for natural gas utilities in the country from 2009 to 2019.486 The only two lower authorized ROEs would be 8.70 percent for the National Fuel Gas Corp in 2017, and 8.80 for Central Hudson Gas and Electric Corporation in 2018. All other authorized ROEs for natural gas utilities in the United States would be higher – many significantly higher -- than that suggested by Mr. Addonizio. Indeed, Mr. Addonizio's recommended ROE of 8.82 percent is 90 basis points below the average authorized ROE for natural gas distribution companies in 2019.

282. It is established by Bluefield and Hope that a rate of return should be reasonably sufficient to assure confidence in the financial soundness of the utility; maintain and support the utility's credit; enable it to attract the capital necessary for the discharge of its public duties; and be commensurate with returns on investments in other enterprises having corresponding risks.

283. The record shows that it is reasonable and appropriate for the Commission to consider differences in business and investment risk between GP and the proxy group companies, and to select an authorized ROE for GP that is above the mean results for the proxy group of gas distribution companies.

284. Due to the risks faced by GP and the average authorized ROEs for other natural gas companies throughout the country, it is reasonable and appropriate for the Commission to select the mean high ROE established in the DOC-DER DCF analysis of 9.67 percent. This amount is closer to the DOC-DER CAPM result reached by Mr. Addonizio (9.38 percent) than Mr. Addonizio's Two-Stage DCF mean result (8.82 percent) and captures

the additional risks of GP as compared to other companies in the proxy group. It allows GP to be competitive in the capital market as compared to other natural gas utilities.

4. Exceptions to ALJ Report – Subjective Evaluation of ROE

Department of Commerce – Recommended ROE

The Department took exception to the ALJ recommendation of a ~~9.72%~~ 9.67% ROE for Great Plains. According to the Department, this recommendation is unsupported by the record and by past Commission decisions. The ALJ recommendation places too much emphasis on the CAPM and allows subjective judgements to compromise the DCF results, inflating the ROE recommendation by 90 basis points. The Department requests that the Commission place greater weight on the DCF analyses as directed by past decisions and follow its reasoning from prior rate cases not to rely on subjective risk judgements.

The Department recommends that the Commission rely on the DCF analyses that were found reasonable by the report, and reject subsequent adjustments to the DCF from the report for two reasons. First, the Commission has rejected Great Plains' prior attempts to obtain an upwards ROE adjustment based on subjective risk factors, including at its most recent rate case. Second, even if these factors were appropriate, the Company failed to demonstrate they are applicable in this case.

The ALJ report relies in ¶ 278 on a citation to *In re Application of Otter Tail Power for Authority to Increase Rates for Electric Service in Minnesota*, MPUC Docket No. E-017/GR-15-1033, in justifying a 90 basis point upward adjustment to the DCF-derived result. This is unwarranted, in the view of the Department, because the Commission rejected such an adjustment for Great Plains in Great Plains' most recent general rate case.

> The Commission concurs with the Department and the ALJ that these risks— together with all company-specific strengths—have been subsumed into the mix of characteristics of the companies in the proxy groups and that adjusting for isolated, company-specific characteristics cutting only in favor of a higher return would improperly skew the DCF analysis.
>
> Making additional adjustments at this point for the characteristics cited by the Company would be likely to result in double-counting.[23]

As a result, the Commission concluded:

[23] *In re Pet. by Great Plains Nat. Gas Co., a Div. of MDU Res. Grp., Inc., for Auth. to Increase Nat. Gas Rates in Minn.*, Docket No. G-004/GR-15-879, FINDINGS OF FACT, CONCLUSIONS, & ORDER at 24 (Sept. 6, 2016)

> In short, it would disrupt the workings and compromise the results of the DCF model by inserting subjective judgments at a stage that is designed to be free of them. [24]

The Department thus recommends revising Proposed Finding 274 and deleting Proposed Finding 278.

> 274. In addition to her DCF, CAPM, and other quantitative analyses, Ms. Bulkley undertook a qualitative review to determine a final ROE within the range of ROE results indicated in her mathematical analyses. She described this as reviewing GP's "risk profile." Specifically, Ms. Bulkley considered GP's small size, its customer concentration, capital expenditures, and regulatory environment when reaching her final ROE decision from the range of results presented in her quantitative analysis. Consistent with Great Plains' previous rate case, Mr. Addonizio ~~did not engage in this~~ concluded that type of additional analysis of qualitative factors is unreasonable ~~and simply selected the mean ROE from his Two Stage DCF equation~~.
>
> ~~278. The Commission recently determined that it is necessary to account for differences in investment risk between the proxy group and the utility for which the return is being set. In its May 2017 Order addressing Otter Tail Power Company's ROE, the Commission found that the higher business risks faced by Otter Tail (which included small size, equity price volatility, low institutional ownership, and trading volume), relative to the proxy group companies, supported a return above the mean DCF results. The Commission stated:~~
>
> > ~~The record in this case establishes a compelling basis for selecting an ROE above the mean average within the DCF range, given Otter Tail's unique characteristics and circumstances relative to other utilities in the proxy group. These factors include the company's relatively smaller size, geographically diffuse customer base, and the scope of the Company's planned infrastructure investments. The Commission has also considered Otter Tail's recognized [sic] the Company's performance in completing major infrastructure projects substantially under budget, its history of providing reliable service with stable rates, and its record of effectively serving the needs of its customers, as measured by multiple customer satisfaction metrics.~~

The Department also notes that Great Plains has not demonstrated that it is entitled to adjustments based on its self-selected risk factors. Great Plains specifically failed to produce and theoretically sound research demonstrating that smaller companies, utilities in

[24] *Ibid.*

particular, experience a size effect. The Department did cite research that shows that size effect remains debatable in this field. Public Utilities benefit from regulatory support and monopoly service territories that lessen the impact of market volatility, protecting utilities from any size effect that does exist in competitive markets. As a result, the Department requests striking Proposed Finding 275, and revising Proposed Finding 276 as follows:

~~275. When deciding on a ROE within a range identified by the quantitative methods described herein (DCF, CAPM, etc.), is reasonable to look to qualitative factors that may justify an upward or downward departure from the mean quantitative results. For example, a company with a history of service issues or financial mismanagement should not be rewarded with an upward departure of ROE from that suggested by the quantitative economic analyses. At the same time, companies that face additional obstacles or risks from their publicly traded proxy group counterparts may be entitled to an upward departure to ensure that they are able to raise capital in the competitive market, in light of such additional risks. There are some risks or factors that are simply not captured by a mathematical equation or quantitative analysis. This is particularly true when comparing a small, non publicly traded company to a large, publicly traded company.~~

276. The record in this proceeding shows that Great Plains is, in fact, ~~significantly~~ smaller than the publicly-traded proxy companies used in the experts' DCF analyses. ~~Unlike large, publicly traded companies, small utilities are less able to withstand adverse events that affect their revenue and expenses, such as weather variability, the loss of a large customer, or reduced demand.~~

The Department also argues that Great Plains does not adequately explain why its customer concentration makes it riskier than the proxy group. The Department notes that 4 of the 8 companies in Great Plains' proxy group also had customer concentration in commercial & industrial delivery that exceed 60% of total deliveries. The Department also argues that the Revenue Decoupling and Margin Sharing mechanisms Great Plains has used in this case allow it to recover costs even when the broader economy declines. Because Great Plains has not demonstrated that its customer concentration is meaningfully different from the proxy groups, the Department requests striking Proposed Finding 277.

~~277. In addition, GP has risk related to the concentration of industrial customers in its service territory focused on agriculture or the production of ethanol. Located in western Minnesota, GP is highly dependent upon its industrial/agricultural customer base, which represents 60.94 percent its 2017 deliveries. Its residential and commercial customers are also dependent on that same industrial base. Consequently, economic events that impact these agricultural and ethanol producers inevitably impact GP's entire customer base.~~

Department of Commerce - the ALJ Report Inappropriately Relied on Past ROEs for Other Utilities in Other Jurisdictions.

The Department argues that it is theoretically unsound and unreasonable to compare the DCF-derived recommendation to ROEs authorized for other utilities in other jurisdictions. Mr. Addonizio had explained in testimony[25] that:

> ROEs authorized even just a few months ago should be viewed with caution, and ROEs authorized farther in the past should be ignored altogether because they cannot be assumed to still accurately reflect investors' required return on equity.

For this reason, the Department requests revisions to Proposed Findings 280 through 284.

280. The Administrative Law Judge finds that the mean Two-Stage DCF results presented by the DOC-DER ~~is~~ are not the sole measure of the return for GP. Rather, such DCF results, while solidly supported, must be viewed in comparison to: (1) the ~~Department's own~~ CAPM results ~~of 9.38 percent; (2) the any unique qualitative risks GP has compared to the proxy group companies; (3) and the competitive investment market in which it operates~~.

~~281. The record establishes that a ROE of 8.82 percent, as recommended by Mr. Addonizio, would be below all but two authorized ROEs for natural gas utilities in the country from 2009 to 2019. The only two lower authorized ROEs would be 8.70 percent for the National Fuel Gas Corp in 2017, and 8.80 for Central Hudson Gas and Electric Corporation in 2018. All other authorized ROEs for natural gas utilities in the United States would be higher many significantly higher than that suggested by Mr. Addonizio. Indeed, Mr. Addonizio's recommended ROE of 8.82 percent is 90 basis points below the average authorized ROE for natural gas distribution companies in 2019.~~

283. The record shows that while it may be ~~is~~ reasonable and appropriate for the Commission to consider differences in business and investment risk in some rate cases ~~between GP and the proxy group companies~~, the record in this case does not support such consideration ~~and to select an authorized ROE for GP that is above the mean results for the proxy group of gas distribution companies~~.

284~~. Due to the risks faced by GP and the average authorized ROEs for other natural gas companies throughout the country, i~~ It is reasonable and appropriate for the Commission to select the mean ~~high~~ average ROE established in the DOC-DER's surrebuttal two-stage DCF analysis of ~~9.67~~8.82 percent. This amount is ~~closer~~ confirmed by ~~to~~ the DOC-DER CAPM result reached by Mr. Addonizio (9.38 percent) ~~than Mr. Addonizio's Two Stage DCF~~

[25] Ex. DER-9 at 70–71 (Addonizio Surrebuttal).

~~mean result (8.82 percent) and captures the additional risks of GP as compared to other companies in the proxy group.~~ Because this ROE is the average of the returns to equity investments in the members of the DOC-DER Proxy Group, ~~I~~ it allows GP to be competitive in the capital market as compared to other natural gas utilities.

V. Flotation Costs for Return on Equity

The Great Plains request contained a 0.10% flotation cost. Great Plains justified this cost by citing its most recent equity issues, in 2002, when Great Plains had approximately 3% flotation costs. Applying this percentage as an 'adder' to the dividend yields of the proxy companies resulted in an approximately 0.1% increase in the required return on equity.

A flotation cost adder to ROE is justified by the concept that investors are entitled to a return on all of the investment, not just the part of the investment which was received by the utility. Put another way, the investment consists of both the investment capital and the transaction costs for issuing stock, and the investor is entitled to return on both.

The Department did not question the need for a flotation cost adder, but did use an adder of 0.05% instead of 0.1%. The Department arrived at 0.05% by noting that not all issues of equity incur flotation costs – if stock is issued as compensation to workers, or as part of a dividend reinvestment program, it does not incur flotation costs. Lacking data, the Department estimated that approximately half of Great Plains' equity represented stock issued with flotation costs, and so applied half of Great Plains' requested flotation cost to its DCF model results (i.e. 0.05%, half of 0.1%) to reach its final proposed ROE.

In rebuttal, Great Plains notes that reinvestment plans and other non-standard issues of stock do incur costs, though acknowledges that these costs are often lower than with public offerings of stock.

The Department notes that Great Plains does not provide any specific calculations, either of percentage of shares which have been issued through public issues or of cost of non-public stock issuances, to justify a specific figure, instead sticking with the 0.1% proposed, which is based on what is likely the higher cost equity issuances. The Department argues that the burden of proof of reasonableness is on Great Plains, and in the absence of that proof that the 0.1% proposal does not overstate the actual cost of equity issuance for investors, stands by its initial 0.05% estimate.

1. ALJ Recommendations on Flotation Costs.

The ALJ recommended a Flotation cost of 0.05%, consistent with the Department Recommendation. The ALJ noted that the burden of proof is on the Company, and lacking a data-driven response by Great Plains to the Department's recommendation, the ALJ is adopting its recommendation.

The ALJ provided the following Proposed Findings.

285. GP and the DOC-DER agree that ROE estimates derived using DCF analyses must be adjusted for flotation costs. Flotation costs are the costs of issuing new shares of common stock. These costs include compensation for the investment banks underwriting the issuance, legal fees, registration fees paid to the U.S. Securities and Exchange Commission (SEC), and other such costs.

286. Due to the issuance costs (i.e., flotation costs), the price paid by an investor for a new share is higher than the sum received by the company issuing the new share. As a result, the company must earn a higher percentage return on its stock issuance proceeds than investors require on their investments in order to meet an investor's required rate of return. A flotation cost adjustment corrects for the difference between gross and net proceeds from equity issuances.

287. Even when a company is not planning on issuing a new common equity stock in the near future, a flotation cost adjustment is necessary to fairly compensate investors for the costs incurred in all past equity issuances. Without accounting for flotation costs, investors will not receive their required return on their investments.

288. GP provided an estimate of the flotation cost percentage on equity issued through underwriters based on two equity issuances by MDU Resources. Based upon these two equity issuances, GP estimated that flotation costs for equity issuances that incurred flotation costs is 3.68 percent.

289. The DOC-DER determined that GP obtained equity from processes that did not incur flotation costs and that the Company's estimate was, thus, overstated. The DOC-DER, however, could not determine how much of the Company's equity did not incur flotation costs. This is because the Company only provided information regarding equity issuances for the period from 2014 to 2018. According to the DOCDER, most of the Company's equity was obtained prior to 2014.Consequently, it did not have data to determine how much of the equity did not incur flotation costs.

290. Lacking the required data from GP, the DOC-DER estimated that half of GP's equity was obtained through means that incurred flotation costs and half was obtained through means that did not incur flotation costs. Using this assumption, the DOC-DER used a flotation cost of 1.84 percent in its calculation of rate of return on equity.

291. Using flotation costs of 1.84 percent, the DOC-DER calculation resulted in a flotation cost adjustment of 0.05 percent or five basis points.

292. GP had an opportunity to respond to the DOC-DER's estimate contained in Mr. Addonizio's direct testimony and provide evidence of the Company's actual flotation costs. In her rebuttal, Ms. Bulkley acknowledged that equity issuances via means other than public issuances are less expensive, but she nonetheless failed to document MDU

Resources' actual expenses relating to non-public equity issuances. Ms. Bulkley stated only that MDU Resources paid the costs of investing employee dividends, but did not provide the costs associated with that employee dividend reinvestment program.

293. GP must prove the facts required to sustain its burden by a fair preponderance of the evidence. The Minnesota Supreme Court has elaborated, "by merely showing that it has incurred, or may hypothetically incur, expenses, the utility does not necessarily meet its burden of demonstrating it is just and reasonable that the ratepayers bear the costs of those expenses." In addition, state law requires that any doubt should be resolved in favor of ratepayers.

294. In this case, GP has not demonstrated that all of its proposed flotation costs were incurred or were reasonable. While the Commission could simply disallow the flotation costs as inadequately supported, the Department has acknowledged that GP has incurred some costs in the issuance of its equity issuances. Because GP documented its public issuance expenses, but not its nonpublic issuance expenses, the DOC-DER was reasonable to recommend allowance of half of the Company's flotation costs.

295. The Administrative Law Judge, therefore, recommends that the Commission adopt a flotation cost adjustment of 0.05 percent or five basis points.

No party provided exceptions to the ALJ recommendation on Flotation costs.

VI. Elimination of Preferred Stock from Capital Structure

Great Plains recalled its preferred stock from investors between rate cases. Great Plains justified this by citing that the interest rate on its long-term debt was significantly lower than the dividend on the preferred stock, and so recalling preferred stock was in the long-term interest of ratepayers.

The Department evaluated the capital structure and did not question the recall of the preferred stock.

1. ALJ Report - Elimination of Preferred Stock from Capital Structure

The ALJ provided the following proposed findings on the elimination of preferred stock from Great Plains' capital structure:

296. The Commission's Notice of and Order for Hearing directed the parties to address GP's preferred stock redemption.

297. On April 1, 2017, GP redeemed all outstanding preferred stock. Preferred stock comprised approximately 0.6 percent of the Company's average capital structure in 2017.

298. GP explained that replacing preferred stock with a long-term debt issuance reduced its financing costs. The Company stated that the preferred stock had dividend rates of 4.5 percent and 4.7 percent, while the long-term debt issuance has an interest rate of 3.36 percent.

299. The DOC-DER evaluated the elimination of preferred stock from the Company's capital structure and concluded that GP's decision to redeem the preferred stock was reasonable for two reasons. First, only two companies in the DOC-DER Proxy Group included preferred stock in their capital structures, and only in small amounts. Second, GP's assertion that redemption of the preferred stock reduced its financing costs was supported by the Company's preferred stock redemption net present value analysis.

300. Accordingly, the DOC-DER concluded that GP's elimination of preferred stock from its capital structure was reasonable. The Administrative Law Judge concurs with the analysis of GP and the DOC-DER.

VII. Staff Analysis

Staff thanks the Administrative Law Judge, Great Plains, the Department, OAG, and other parties for their hard work on this case. Staff believes that the parties have provided the Commission with an extensive and detailed record with which the Commission will be able to produce a fair and equitable outcome for the ratepayers, the Company and its shareholders, and all other interested parties in this case.

Staff notes that though there are other differences between the two DCF models proposed by parties, the decision which makes the largest difference between the two parties is the addition or omission of the 27% return on equity for Northwest Natural Gas (NWN) to the proxy group. Adding New Jersey (NJR), South New Jersey (SJI), and NiSource (NI) to the Department model make very little difference to the outcome of the Constant Growth DCF and to the Two Stage Growth DCF, but adding back the 27% return to the Department Two-Stage Growth DCF model alone increases the outcome by over 100 basis points, from 8.77% to 9.96%.

Table 2-9
Staff Estimate of 2 Stage Growth Model with Various Assumptions

Model	Dept/ALJ Approved	Great Plains	Dept + SJI, NI	Dept + 27% NWN	Dept+ SJI, NI, 27% NWN	Dept + SJI, NJR, NI, 27% NWN	Dept + SJI, NJR, NI
2 Stage	8.77%	10.11%	9.53%	9.96%	10.28%	9.99%	9.54%

Notes:
Dept/ALJ Approved – Department model approved by ALJ, Surrebuttal
Great Plains – Great Plains model – Rebuttal Testimony

SJI – South Jersey Industries – Excluded by ALJ, Great Plains Exception
NI – NiSource – Excluded by ALJ, Great Plains Exception
27% NWN – the 27% Growth Rate for Northwester Natural Gas for Value Line – Excluded by ALJ, Great Plains Exception
NJR – New Jersey Resources – Excluded by ALJ, no Exception requested

The primary difference between "Great Plains" and "Dept + SJI, NJR, NI, 27% NWN" is different stock prices at the time the model was run, plus the choice to use the sample standard deviation by Great Plains vs. population standard deviation by the Department.

Staff notices one minor difference between the Great Plains Two-Stage Growth DCF and the Department's Two-Stage Growth DCF which was not called out by any party. When calculating the second growth rate, Great Plains uses a sample standard deviation, while the Department uses the population standard deviation. Since the proxy set is, essentially, a sample of similar companies to Great Plains, using the sample standard deviation makes more sense to Staff. Making that change to the Department's model increases the mean expected ROE from 8.77% to 8.81%, which would result in a recommended ROE of 8.86%, inclusive of a 0.05% flotation cost. Table 2-9 above is a table of Staff estimates of ROE based on various modifications of the ALJ proposed Decision using the Department model as a baseline.

VIII. Decision Alternatives

Capital Structure and Cost of Short and Long-Term Debt

201. Adopt the ALJ's recommendation of the following capital structure:

Capital	Percentage
Short Term Debt	4.053%
Long Term Debt	45.132%
Equity	50.815%
	100%

202. Approve the ALJ recommendation of a Return on Short Term Debt of 3.693% and Return on Long Term Debt of 4.712%.

203. Adopt the ALJ recommended Findings of Fact 159 through 167 in support of the recommended capital structure and cost of debt.

Cost of Equity

ALJ

204. Adopt the ALJ recommendation of a Return on Equity of ~~9.72%~~ 9.67%, inclusive of 0.05% Flotation costs. (ALJ, Great Plains)

205. Adopt Findings of Fact 167 through 300 in support of the ALJ recommended Return on Equity.

Great Plains

206. Adopt the ALJ recommendation of a Return on Equity of ~~9.72%~~ 9.67%, inclusive of 0.05% Flotation costs. (Great Plains)

207. Adopt modified Findings of Fact to support Exceptions of Great Plains.

Department

208. Adopt the Department's recommendation of a Return on Equity of 8.82%, inclusive of 0.05% Flotation costs. (Department)

209. Adopt Findings of Fact 167 through 300 as modified by the Department in Findings 271 through 278.

271. In sum, the Administrative Law Judge finds that ~~gives significant weight to~~ the DOC-DER's CAPM results of 9.38 percent confirms the reasonableness of its DCF results because it ~~This amount~~ is squarely within the range of DCF results in both Mr. Addonizio's initial and final DCF analyses (ranging from 8.03-9.75 percent and 7.90 – 9.67 percent, respectively), ~~falling closing to the high mean range~~.

~~272. It is also more consistent with Ms. Bulkley's application of Mr. Addonizio's DCF analysis when applied to GP's Proxy Group (which included the three companies excluded by Mr. Addonizio). Using Mr. Addonizio's methodology for DCF, but applied to GP's larger proxy group, would result in a Two Stage Growth DCF mean result of 9.47 percent before the application of flotation costs, and 9.52 percent after the addition of Mr. Addonizio's recommended flotation costs of five points.~~

~~273. When using the GP Proxy Group and adjusting the Value Line earning growth rate for Northwest Natural, as recommended by Mr. Addonizio, the mean Two Stage Growth DCF is 9.58 percent before the addition of flotation costs, and 9.63 percent after the addition of five basis points flotation costs. In other words, applying Mr. Addonizio's methodology to GP's Proxy Group nets results closer to Mr. Addonizio's CAPM than his own Two Stage Growth DCF results for the DOC DER Proxy Group.~~

274. In addition to her DCF, CAPM, and other quantitative analyses, Ms. Bulkley undertook a qualitative review to determine a final ROE within the range of ROE results indicated in her mathematical analyses. She described this as reviewing GP's "risk profile." Specifically, Ms. Bulkley considered GP's small size, its customer concentration, capital expenditures, and regulatory environment when reaching her final ROE decision from the range of results presented in her quantitative analysis. Consistent with Great Plains' previous rate case, Mr. Addonizio ~~did not engage in this~~ concluded that type of additional analysis of qualitative factors is unreasonable ~~and simply selected the mean ROE from his Two Stage DCF equation~~.

~~275. When deciding on a ROE within a range identified by the quantitative methods described herein (DCF, CAPM, etc.), is reasonable to look to qualitative factors that may justify an upward or downward departure from the mean quantitative results. For example, a company with a history of service issues or financial mismanagement should not be rewarded with an upward departure of ROE from that suggested by the quantitative economic~~

~~analyses. At the same time, companies that face additional obstacles or risks from their publicly traded proxy group counterparts may be entitled to an upward departure to ensure that they are able to raise capital in the competitive market, in light of such additional risks. There are some risks or factors that are simply not captured by a mathematical equation or quantitative analysis. This is particularly true when comparing a small, non publicly traded company to a large, publicly traded company.~~

276. The record in this proceeding shows that Great Plains is, in fact, ~~significantly~~ smaller than the publicly-traded proxy companies used in the experts' DCF analyses. ~~Unlike large, publicly traded companies, small utilities are less able to withstand adverse events that affect their revenue and expenses, such as weather variability, the loss of a large customer, or reduced demand.~~

~~277. In addition, GP has risk related to the concentration of industrial customers in its service territory focused on agriculture or the production of ethanol. Located in western Minnesota, GP is highly dependent upon its industrial/agricultural customer base, which represents 60.94 percent its 2017 deliveries. Its residential and commercial customers are also dependent on that same industrial base. Consequently, economic events that impact these agricultural and ethanol producers inevitably impact GP's entire customer base.~~

~~278. The Commission recently determined that it is necessary to account for differences in investment risk between the proxy group and the utility for which the return is being set. In its May 2017 Order addressing Otter Tail Power Company's ROE, the Commission found that the higher business risks faced by Otter Tail (which included small size, equity price volatility, low institutional ownership, and trading volume), relative to the proxy group companies, supported a return above the mean DCF results. The Commission stated:~~

> ~~The record in this case establishes a compelling basis for selecting an ROE above the mean average within the DCF range, given Otter Tail's unique characteristics and circumstances relative to other utilities in the proxy group. These factors include the company's relatively smaller size, geographically diffuse customer base, and the scope of the Company's planned infrastructure investments. The Commission has also considered Otter Tail's recognized [sic] the Company's performance in completing major infrastructure projects substantially under budget, its history of providing reliable service with stable rates, and its record of effectively serving the needs of its customers, as measured by multiple customer satisfaction metrics.~~

Commission Determined Alternative

210. Adopt another Return on Equity as determined by the Commission.

211. Adopt Findings of Fact 167 through 300 as modified to support a Return on Equity as de by the Commission.

Overall Cost of Capital

If the Commission has made specific findings regarding capital and their component costs, it does not need to make a specific finding on the overall cost of capital. However, to avoid possible confusion or questions regarding the Commission's decision, it may want to adopt a specific overall cost of capital (Rate of Return) for this proceeding.

Some Commission alternatives regarding the overall cost of capital are:

212. Adopt an overall cost of capital of ~~7.216~~ 7.190% percent. (GP, ALJ)

213. Adopt an overall cost of capital of 6.758 percent. (Department)

214. Determine that some other overall cost of capital is appropriate and have the staff calculate the proper value, based on the component parts, for inclusion in the order.