Public Service Company of New Hampshire d/b/a Eversource Energy
Docket No. DE 24-070

Date Request Received: October 03, 2024 **Date of Response: November 06, 2024**
Data Request No. PUC TS1-002 (Corrected) **Page 1 of 2**

Request from: New Hampshire Public Utilities Commission

Witness: Horton, Douglas P.

Request:

Provide a version of PUC 1-003 that shows the rate increases cumulatively over the rate plan period beginning with the rate increase proposed in this case. In the graph, isolate the components of the rate changes, such as those attributed to base distribution rate changes I-X and K-bar.

Response:

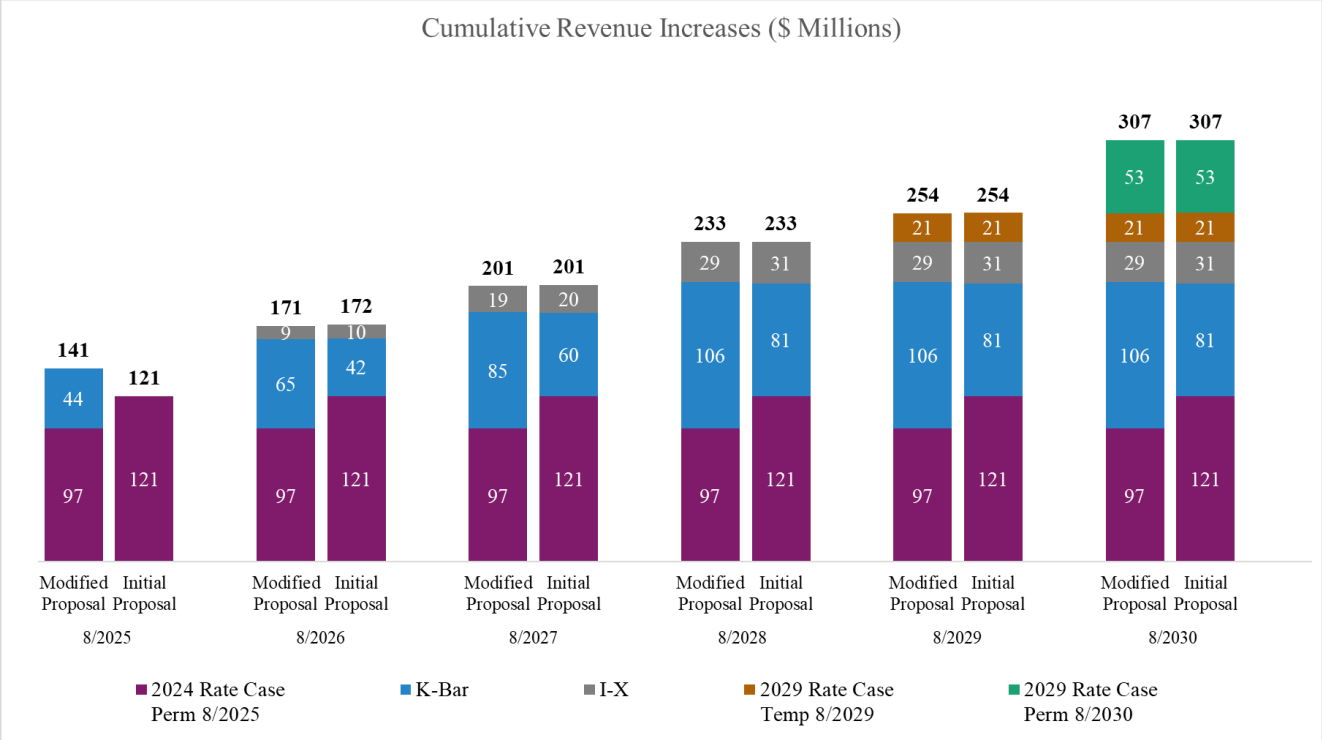
Please refer to the chart below. As discussed during technical sessions, the Company's modified proposal includes the removal of the revenue requirements related to incremental 2024 investment from Perm rates effective August 1, 2025 (estimated at approximately $24 million in the Company's permanent rate request) to be replaced by a K-bar revenue adjustment (estimated at approximately $44 million) to take effect on August 1, 2025. The first K-bar adjustment would rely on average annual investment for the years 2022-2024 escalated to 2025 dollars using the I-X formula. Though the Company's modified proposal includes K-bar revenues effective August 1, 2025, there would be no I-X revenue increase taking effect at that time. The subsequent PBR increases (both K-bar and I-X) would proceed as normal with rates effective August 1st of 2026, 2027, and 2028, consistent the Company's initial proposal.

As depicted in the chart below (all revenues are cumulative):

- The purple series at the bottom represents the incremental Perm rate increase effective August 1, 2025. As discussed above and at technical sessions, the modified proposal is approximately $24 million less than the original proposal. This bar reflects the Company's permanent rate request, as filed, of approximately $182 million, less the temporary rate increase implemented on August 1, 2024 of $61 million. Therefore, the August 2025 rate change under the Company's initial proposal is equal to $121 million ($182 million permanent rate change, less $61 million reflected in the temporary rate adjustment). This $121 million increase includes $24 million of plant additions related to 2024 capital additions, consistent with the Company's initial request. As described in the response to PUC-1-3, under the modified proposal this $24 million would be removed from the permanent rate increase, resulting a base increase of $97 (instead of $121 million), and, in its place, the first K-bar revenue requirement of $44 million would go into place, as described below.

- The blue series reflects the cumulative k-bar revenue increases, including the first increase ($44 million) effective August 1, 2025 in the Company's modified proposal.
- The gray series represents I-X revenues, where X=0 and GDPPI is approximately 2% per year. These amounts are slightly reduced in the Company's modified proposal as a result of the "going-in" revenue requirement reduction for the removal of 2024 investment from Perm rates effective August 1, 2025.
- The orange series represents the Company's next rate case, with Temp rates effective August 1, 2029
- The green series represents the subsequent Perm rate increase August 2030 arising from the Company's next rate case.

PUC TS1-002 Chart



Public Service Company of New Hampshire d/b/a Eversource Energy
Docket No. DE 24-070

Date Request Received: October 03, 2024 **Date of Response: November 06, 2024**
Data Request No. PUC TS1-005 (Corrected) **Page 1 of 6**

Request from: New Hampshire Public Utilities Commission

Witness: Renaud, Paul R., Dickie, Brian J., Coates Jr., Robert S.

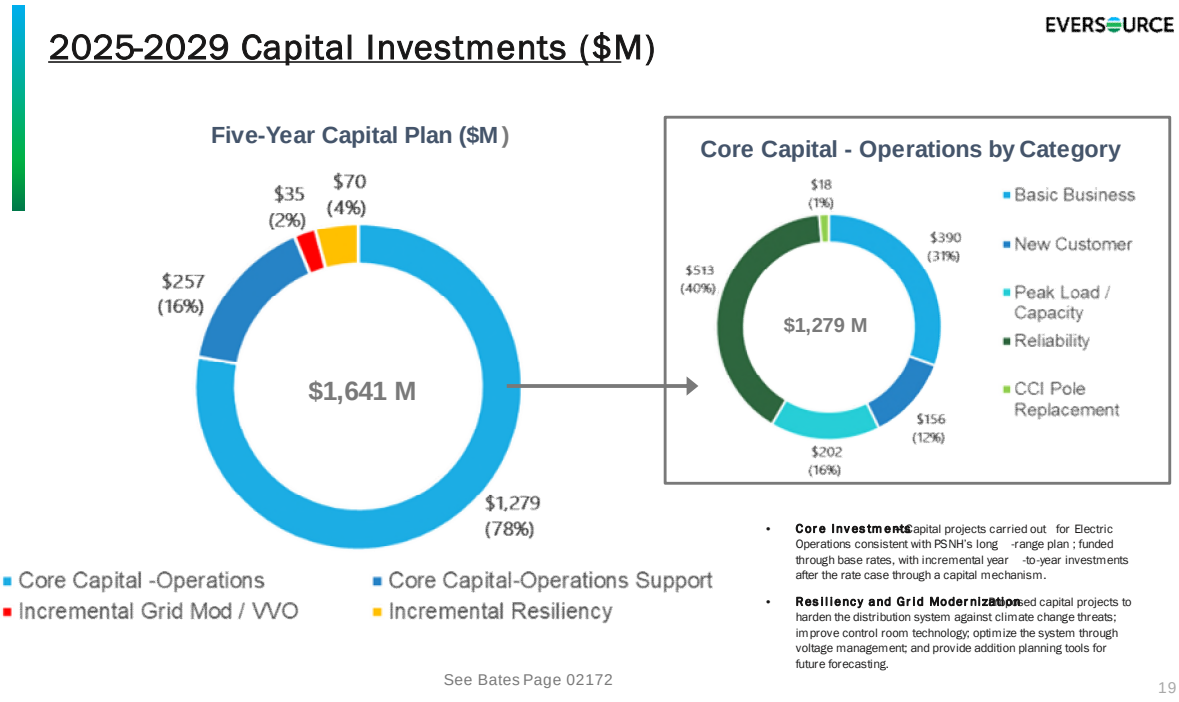
Request:

Referring to PUC 1-024 through PUC 1-027. Provide the investments by category for 2025-2029. Please also include the budget/actual spend by those same categories in 2019-2023, both in graphical and table form by year. Provide 1 project listing for 2019-2023 and 1 project listing for 2025-2029 for all budget categories. As part of this response, distinguish between core capital and incremental investments as well as correlate the capital spending to the overall K-bar cap included in PUC TS1-006 below.

Response:

Please refer to Attachment TS1-005(a) for the investments by category for 2025-2029 in graphical and table form by year. Please refer to Attachment TS1-005(b) for the 2019-2023 five year budget-to-actual report by project. Attachment TS1-005(c) provides the 2025-2029 for the five-year budget by each project.

Please note, Attachment TS1-005(a) and Attachment TS1-005(c) provides the core capital investments as shown on Slide 19 (copied below) of the Company's presentation of its Distribution Solutions Plan on October 8, 2024. The incremental Grid Mod/VVO and resiliency investments are budgeted in 2025-2029 as depicted below and are not included in the attachments.



See Attachment PUC TS 1-005(d) showing grid modernization capital additions placed in service by year. For the purposes of this response, the Company used a definition of "grid modernization" that includes investments in technologies or systems that increase visibility and control of the distribution grid for the purposes of increasing reliability, integrating distributed energy resources (DER), and increasing the efficiency of power flow delivery. The investments detailed in Attachment PUC TS 1-005(d) were all included in the Company's base distribution capital plan because their primary use cases were to improve reliability and operational efficiency.

The incremental grid modernization investments proposed by the Company for the 2025-2029 period are distinct from these prior investments and are driven primarily by opportunities to improve DER integration and reduce energy and demand inefficiencies associated with energy delivery.

Below please find Table PUC TS1-005 with a description of the grid modernization projects.

TABLE PUC TS1-005

Technology Type	Description (Reference section)	Cost Reference Section/page number	Cost Description
Field Device - Distribution Automation	Installation of new remote controlled reclosers and switches	Section 5.2.2.1, Bates Page 02141	Design, build, and commission of field devices. In addition, there is ongoing maintenance of this new equipment included.
Field Device – DER Gateway	Installation of new device for the control and monitoring of DER	Section 5.4.2, Bates Page 02167	
Field Device – Capacitor Bank	Adding SCADA control to cap banks	Section 5.2.2.1, Bates page 02140-02141	
Field Device – Line Regulator	Adding SCADA control to line voltage regulators	Section 5.4.2, Bates Page 02165	
Field Device – Line Sensor	Installation of metering points on the distribution circuit to provide a feedback loop into optimization power	Section 5.2.3, Bates Page 02145	
Substation Equipment – Microprocessor relays	Replacing electromechanical relays with programmable microprocessor relays	Section 5.2.2.1, Bates Page 02141	Design, build, and commission of substation feeder breaker relays. In addition, there is ongoing maintenance of this new equipment included
Substation Equipment – LTC Controls		Section 5.2.2, Bates Page 02140	
Software – DMS	Implementation of the Distribution Management System	Section 1.2.4, Bates Page 02020	Software, hardware, services, and labor required to

Software – DERMS	Operational system to manage the monitoring and control of DER on the distribution system	Section 5.4.2, Bates Page 02167	implement this operations system. Also includes on-going vendor support and Eversource internal labor.
Software - OMS	Operational system to manage events on the system to effectively dispatch crews to respond	Section 2.4.7.5, Bates Page 02078-02079	
Software - GIS	Source database that represents the as-built equipment and conditions on the distribution system	Section 2.4.7.6, Bates 02079	
Software - iTOA	Work request tool used by System Operations to manage planned work on the transmission and distribution system	Section 5.4.3.2 at Bates Page 02169	
Software – Avtec	Communications platform used to consolidate multiple communications channels into a single user interface for efficient communications between system operators and field personnel.	Section 2.4.7.1, Bates Page 02076	
Software – Aclara	System that receives data from installed line sensors and is	Section 2.4.7.1, Bates Page 02076	

	used to trend loading at that particular location on the system		
Software - Click Mobile	Mobility solution used to communicate and process planned and emergent work with field personnel	Section 2.4.7.5, Bates Page 02078-02079	
Software - Synergi	Electric system modeling tool used to study load and generation impacts and develop long term system upgrades.	Section 5.4.3.2 at Bates Page 02169	
Software – NH Powerclerk	Customer facing tool to enter application for DER interconnection and data source for engineering and real-time power flow solutions	Section 5.4.3.2 at Bates Page 02169	
Communications – Private Radio	Base radio and end-point radio installations that are used for voice and SCADA data communications.	Section 2.4.7.1 at Bates Page 02076	Implement additional base radios to provide communications coverage to field devices and ongoing maintenance activities related to these facilities
Communications – Cellular	Implementation of cellular modems used to establish connectivity with	Section 5.2.5 at Bates Page 02147	Implementation of new cellular modems into field devices and the

	field devices over public carrier networks		ongoing cost for data with public carriers
Communications - Fiber	Creating high speed connectivity to critical locations.	Section 2.4.7.1 at Bates Page 02076	Installation of new fiber circuits and cost to maintain those circuits. In addition, there are costs for leased circuits from 3rd party vendors.

Request from: New Hampshire Public Utilities Commission

Witness: Horton, Douglas P.

Request:

Please provide a calculation showing the maximum K-bar revenues that would be allowed for under operation of the K-bar at different levels of spending. Please include the maximum both with and without Grid Modernization. Please also describe how the incentive properties vary under a PBR framework as proposed by the Company (inclusive of a K-Bar mechanism) as compared to traditional cost of service ratemaking with periodic sequential base rate cases.

Original Response:

Please refer to PUC TS1-008 Tables 1 and 2 below. These tables illustrate the maximum revenue increase allowed under the Company's modified proposal for two scenarios as compared to the corresponding base revenue change enabled by the K-bar under the Company's modified proposal. This analysis was raised during technical sessions and was originally addressed in the Company's response to PUC 1-003. The two scenarios are described below.

- **Scenario 1, Maximum Total Revenue Increase (incorporating the 10% differential), core capital only.**
    - Assumes the K-bar mechanism reflects the maximum eligible capital investment, including a 10% cap on investment (i.e. the Company's current forecast plus 10 percent), reflecting core distribution capital only and excluding grid modernization and resiliency projects.
    - Annual capital investment is shown in PUC TS1-008 Table 2, Line 3.
    - Cumulative revenue increases are shown in PUC TS1-008, Table 1, Line 9, which are $2 million, $6 million, and $10 million greater than the Company's modified proposal as filed for rates effect August 1, 2026, August 1, 2027, and August 1, 2028, respectively.
- **Scenario 2, Maximum Total Revenue Increase (incorporating the 10% differential), including grid modernization and resiliency.**
    - Assumes the K-bar mechanism reflects the maximum eligible capital investment, including a 10% cap on investment (i.e. the Company's current forecast plus 10 percent), *including* grid modernization and resiliency projects.

- Annual capital investment is shown in PUC TS1-008 Table 2, Line 8, which includes grid mod and resiliency investment of $15 million, $21 million, and $20 million for calendar years 2025, 2026, and 2027, respectively (Line 5 of Table 2).
- Cumulative revenue increases are shown in PUC TS1-008, Table 1, Line 14, which are $3 million, $8 million, and $15 million greater than the Company's modified proposal as filed for rates effect August 1, 2026, August 1, 2027, and August 1, 2028, respectively.

Please note that both scenarios assume all capital expenditure is placed in-service as expended. That is, no capital expenditure is "carried over" to subsequent periods, as is often the case with larger projects, such as substation builds. In Scenario 2, all Grid Mod and Resiliency investments are allowed to flow through the K-bar mechanism, although those amounts would require separate approval by the Commission before recovery would be allowed through the K-bar mechanism. The forecasted investment for the years 2025-2027 for these programs is $56 million combined, approximately $15 million - $20 million per year.

PUC TS1-008 Table 1

	($ Millions)	Rates Effective August 1, 2025	August 1, 2026	August 1, 2027	August 1, 2028
1	**Cumulative Revenue Increase**				
2	*Per Modified Proposal*				
3	I-X (X = 0)		9	19	29
4	K-bar, Per Modified Proposal	44	65	85	106
5	Total Revenue Increase (A)	44	74	104	136
6	*PBR at Maximum K-Bar (excluding Grid Mod/Resiliency)*				
7	I-X (unchanged from Line 3 above)		9	19	29
8	K-bar, Maximum	44	67	90	117
9	Total Revenue Increase	44	77	109	146
10	**Difference, Total Revenue vs (A) Above**		**2**	**6**	**10**
11	*PBR at Maximum K-Bar (including Grid Mod/Resiliency)*				
12	I-X (unchanged from Line 3 above)		9	19	29
13	K-bar, Maximum	44	68	92	121
14	Total Revenue Increase	44	77	111	151
15	**Difference, Total Revenue vs (A) Above**		**3**	**8**	**15**

PUC TS1-008 Table 2

	Annual Capital Investment ($ Millions)	2025	2026	2027	3yr Total	Reference
1	Core Investment, excl. Grid Mod/Resiliency	311	311	298	920	PUC TS1-006 Table, Line 12
2	10% cap	31	31	30	92	Line 1 x 10%
3	CAPPED Investment, excl. Grid Mod/Resiliency	342	342	328	1,012	Line 1 + Line 2
4	Core Investment, excl. Grid Mod/Resiliency	311	311	298	920	Line 1
5	Grid Mod & Resiliency Investment	15	21	20	56	PUC TS1-006 Table, Line 15
6	Investment, incl. Grid Mod/Resiliency	326	332	318	976	Line 4 + Line 5
7	10% cap	33	33	32	98	Line 6 x 10%
8	CAPPED Investment, incl. Grid Mod/Resiliency	359	365	350	1,074	Line 6 + Line 7

Supplemental Response:

With respect to differences between traditional base distribution rates and implementation of a PBR Plan in terms of capital investment, it is important to consider several objectives, including: (1) the interests of customers in having safe and reliable electric service, at a reasonable cost; (2) the opportunities to stabilize and level distribution rates to assist customers in paying for the costs of the system; (3) the need for constant and adequate investment on the system to maintain safe and reliable service to customers as the system ages and technology changes; and (4) the interests of the Company in obtaining timely and adequate cost recovery to support investment on the system that is *needed* to serve customers.

Because it is difficult for regulators to balance these interests with imperfect information and limited technical resources and time, the integrity of the ratemaking structure is critical to drive cost efficiency and appropriate investment planning without causing customers to overpay or underpay in that endeavor. In that regard, Eversource does not want to "over invest" – its capital resources are not infinite and there are significant capital needs across the Eversource system requiring the availability of those resources. At the same time, Eversource plans to meet its obligations on the PSNH system and reserves the capital resources necessary to assure that the needs of the PSNH system are met. The ratemaking structure is vital to achieving and maintaining that balance.

Because capital resources are constrained, there is no incentive to over-invest under either traditional distribution rate cases or a PBR Plan, including K-bar. The benefit that Eversource sees in the PBR model, including the K-bar mechanism, is that it best achieves the four objectives inherent in balancing customer and company interests. It has strong cost efficiency incentives, because recovery is stable, predictable and limited – while conversely, rate changes are more predictable and gradual for customers.

Under a traditional rate-case cycle, recovery is available, and the Company is able to invest what it determines is necessary to invest and then to file a rate case at any interval that serves the Company's schedule. However, although this lends predictability to the Company, it does not offer customers the gradualism that PBR provides, and it does not force the Company to stretch the way it would if it could *not* file a rate case due to the PBR Plan stay-out requirement. Because a PBR Plan allows the Company to plan out its limited capital resources over a period of time, there is a benefit to the Company, even if the stretch component causes the Company to have to forego a rate case in the interim.

It is the limitations on capital availability that is the strongest impetus for conservative capital investment. Like all investor-owned utilities, the Company operates in an extremely capital-intensive environment, investing in system infrastructure investments needed to serve our customers safely. There is a persistent gap between the level of capital expenditure investments annually made and the level of capital expenditures able to be paid for, through customer revenues provided through rates, and that gap must be closed (or financed) with long-term sources of capital in the form of long-term debt and equity. This concept is not new and is not unique for PSNH. See, for instance, the National Council on Electricity Policy Mini Guide[1] entitled "PUCs and the Investment Community: Opportunities for Engagement."[2] The Mini Guide states:

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[1] The National Council on Electricity Policy is a platform for all state-level electricity decision-makers to share and learn from diverse perspectives on the evolving electricity sector. The NCEP mini guide series promotes this dialogue by highlighting examples of successful engagement across its members. Each mini guide features collaborative approaches, lessons learned, and interviews with leading state and local decision-makers. Although the NCEP is stated to have an electricity industry focus, the ratemaking principles are transferrable to gas, if not identical to gas distribution companies, as well.

[2] Mini guide on PUCs and the Investment Community: Opportunities for Engagement, prepared by John Quackenbush, JQ Resources, LLC, February 2023 for the National Council on Electricity Policy ("NCEP"), administered by the National Association of Regulatory Utility Commissioners ("NARUC") Center for Partnerships & Innovation ("CPI") (available at: https://pubs.naruc.org/pub/0995C28A-1866-DAAC-99FB-6C389AB7D35D?_gl=1*8j741f*_ga*MTg5MDAyMTI3Ny4xNjg0OTQ0OTg1*_ga_QLH1N3Q1NF*MTcxNTE4Njc0OC4yLjEuMTcxNTE4Njg3MS4wLjAuMA).

> Electric utilities require large amounts of long-term financial capital to build, operate, and maintain power producing facilities and the infrastructure that supports electricity delivery. The investment community provides capital to meet investor-owned utilities' financing needs under the oversight of public utility commissions (PUCs). One of the core regulatory duties of PUCs is rate making, or tariff setting, to determine the rates that customers pay for utility services. Across the country, PUCs ensure that utility rates are fair, just, and reasonable for customers. A PUCs' rate-making duties are intended to balance the interests of utility customers to pay just and reasonable rates while attracting capital from utility investors to fund needed investments. Utility services are largely the result of investments in infrastructure, which can be at significant cost and last for multiple decades, making utilities among the most capital-intensive industries in society.

Under traditional cost of service ratemaking (i.e., with no adjustments for new capital investments), revenue support between rate cases comes solely from increased sales revenues generated by growth in the number of customers, or in growth in usage per customer, or both. That additional revenue enables the utilities to absorb cost increases (i.e., to support additional capital investment), as long as those cost increases generally tracked with the level of revenue increases generated from sales increases. With increasing sales, utilities are able to manage their expense structure to avoid filing a rate case until such time as their expenses became out of alignment with revenues at existing rates.

The Company is not forecasting increasing sales in the foreseeable future, and accordingly the level of funding for ongoing capital investment provided through base rates is generally static year-over-year. The proposed PBR mechanism maintains regulatory lag providing the same incentive to control costs, but provides a revenue adjustment to support increasing capital additions during a stay-out period. This alternative ratemaking design is intended to provide a representative level of revenue increases that can support the Company during the stay-out in the current operating environment of relatively flat sales. The design maintains regulatory lag, however, by not providing full recovery of capital investments, thereby maintaining the risk of a gap between revenues and investments.

As mentioned previously, if a utility company invests more in infrastructure than what is provided in rates, it must finance that gap with a combination of debt and equity. All else equal, this will immediately put downward pressure on returns that are below the authorized level of return in rates, providing a disincentive for investment at a level above what is actually needed by the system.

This dynamic is caused by two key factors:

1) Increasing capital project levels will increase expense levels beyond which is provided for through rates. As actual investment levels increase, so does depreciation expense on the increased plant balances. Higher depreciation expense beyond what is reflected in rates results in lower earned net income. Higher investment levels also will result in increased debt service payments for the portion of infrastructure financed by debt, as well as higher property tax expense to the extent the plant placed into service is taxable for property tax expense.

2) Increased investment levels reduce earned return on investment as a percentage return on equity, since the equity needed to finance the increased investment will result in a higher equity balance. The calculation of return on equity is net income divided by equity, and thus a higher denominator results in a lower return on equity, all else equal.

By investing at levels greater than the level of depreciation expense allowed in rates, and above the level supported by additional revenues provided for through the PBR/K-Bar, earned returns will deteriorate, because both components of the equation will contribute to lower earned rates of return (net income will decline due to higher depreciation expense, interest expense, and property tax expense, and the equity balance will increase to finance the higher investment level, putting downward pressure on earned returns).

Consequently, this strategy is not one that responsible utility managers would undertake, unless the system ***requires*** additional expenditure over what is in rates and then the utility managers know that: (1) they must meet their obligations and make the investments; and (2) they will subsequently file a rate case to align that investment with rates. In a rate case, the utility must pass a prudence review testing the need for the projects. Given the pressure and risk of passing that prudence review, utility managers would not incur a reduction to the earned return to make investments that are ***not needed***, while simultaneously increasing the risk for that prudence review. Again, with limited capital resources available, taking actions that diminish the earned return and increase risk in a prudence review is not an action that utility managers will take.