



# NGL SHIPPING ENERGY OPTIMIZATION

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# Outlines



**Objectives**

**NGL Shipping Process Overview**

**Inherent System Drawbacks**

**Proposed Solutions**

**Required Modifications**

**Financial Analysis**

**Comparison of Current & New Changes**

**Summary**

# Objectives

- Eliminating inherent system drawbacks associated with the existing NGL shipping process
- Enhancing reliability
- Reducing energy loss
- Accruing financial gains



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Proposed Solutions

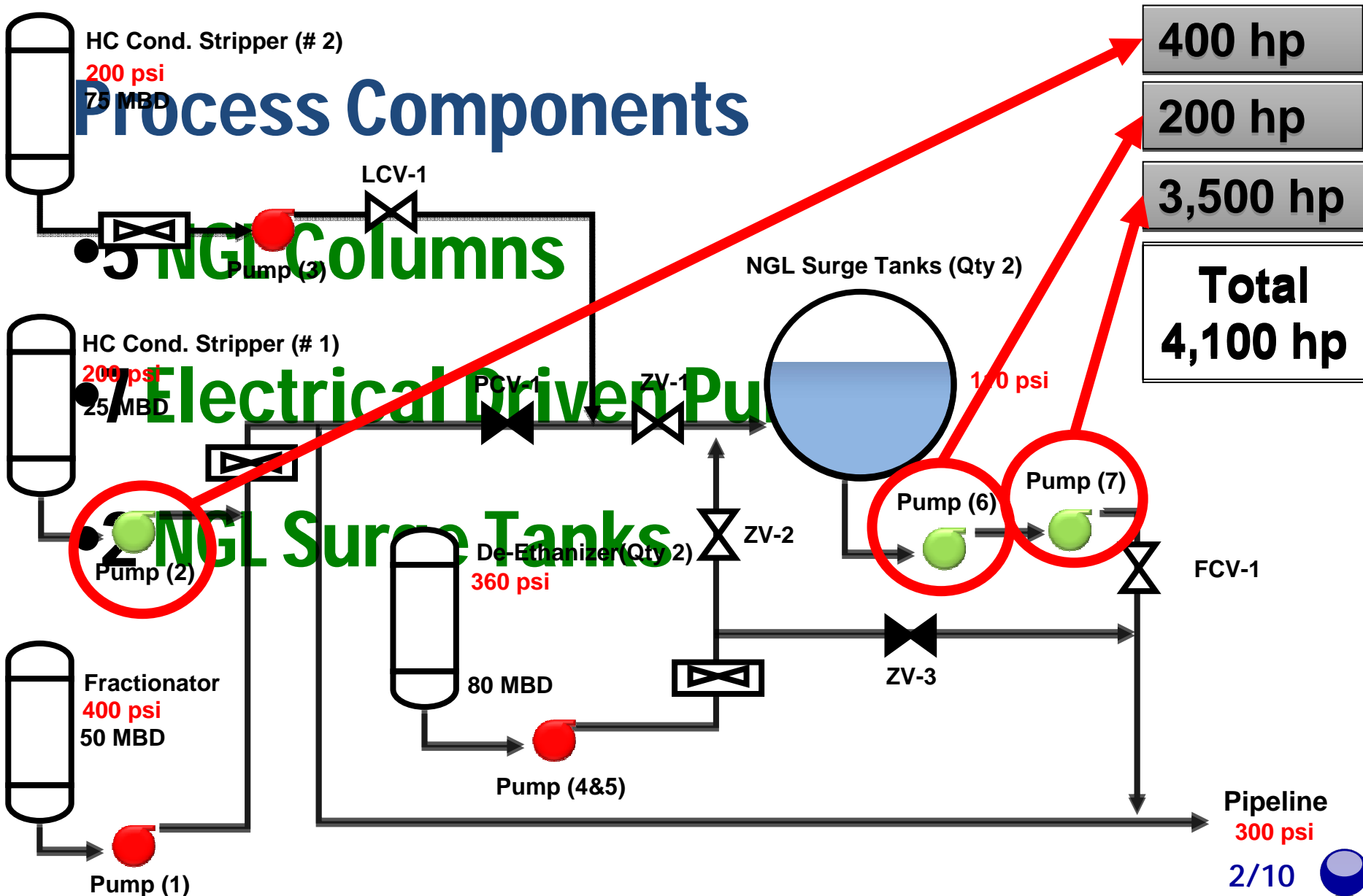
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# Existing NGL Shipping Process



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# Inherent System Drawbacks

- Vibration & Noise on LCV-1; High Diff. (P) 
- Noise at Shipping Pump Area (Pump 7)
- Possibility of Pipeline pressure exceeding the max. allowable pressure of 450 psi  
*(Pump 7 max. discharge pressure is 1000 psi)*
- Wasting (2,628 hp)1.93 MW



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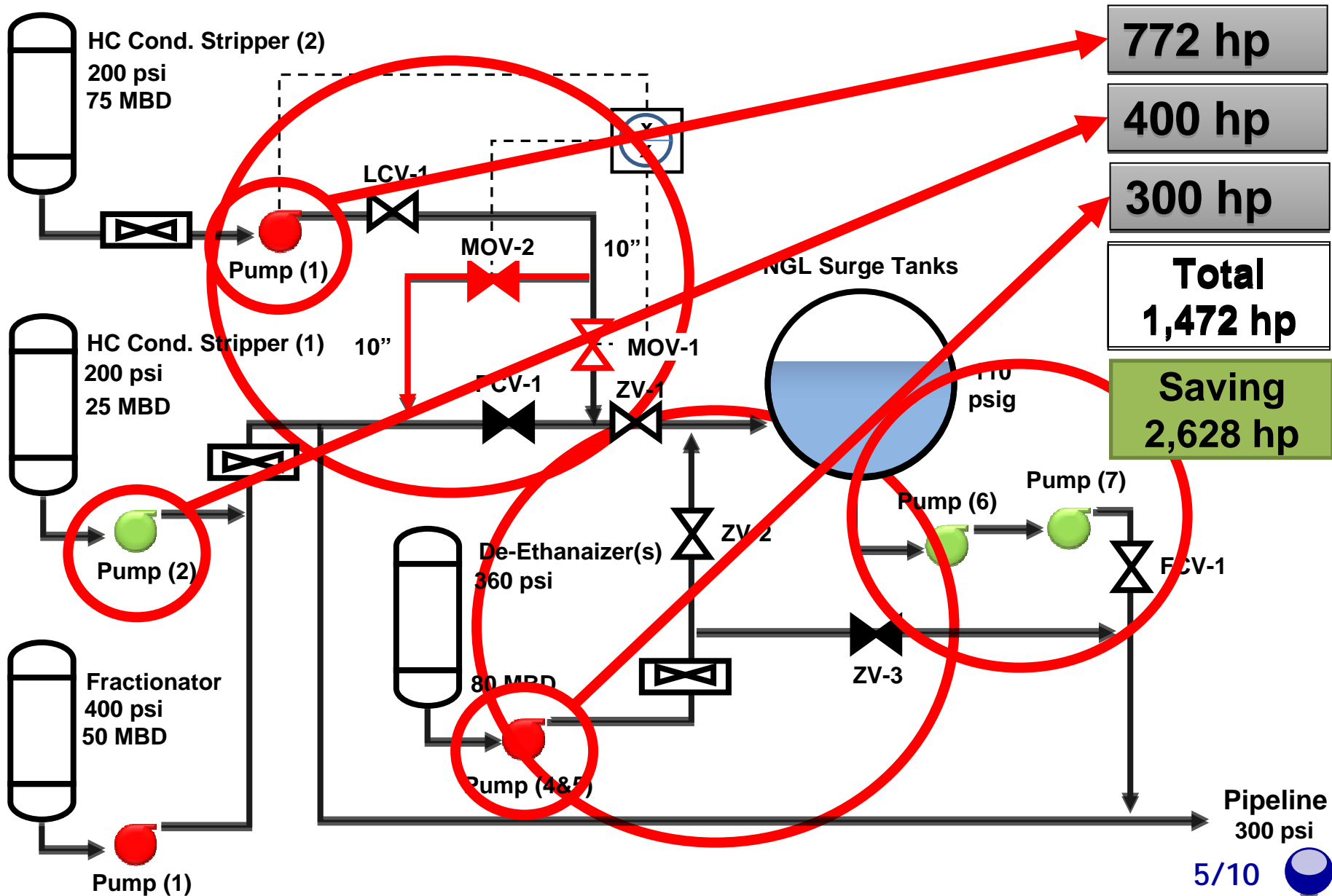
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# Proposed Solutions



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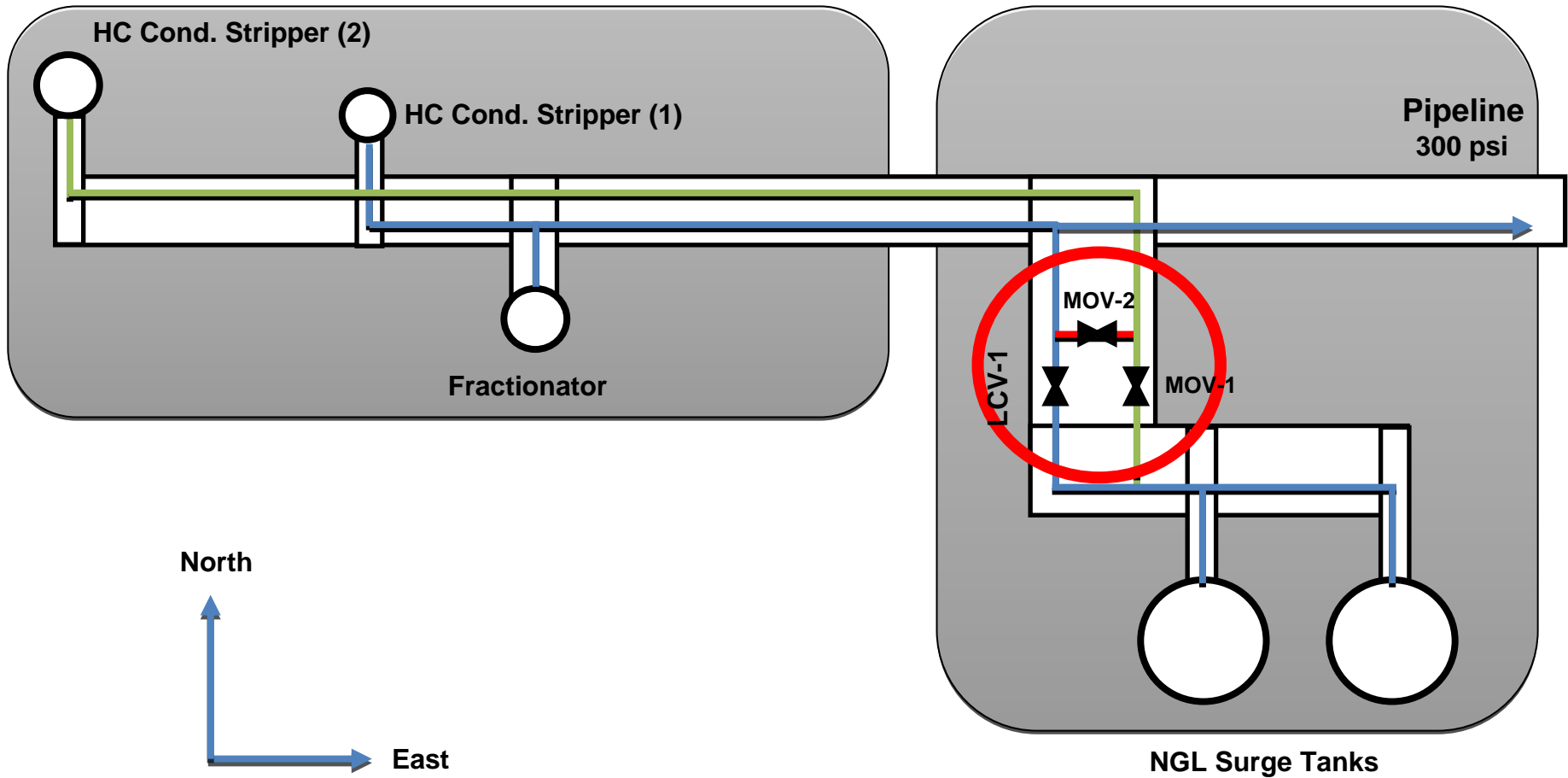
**Required Modifications**

Financial Analysis

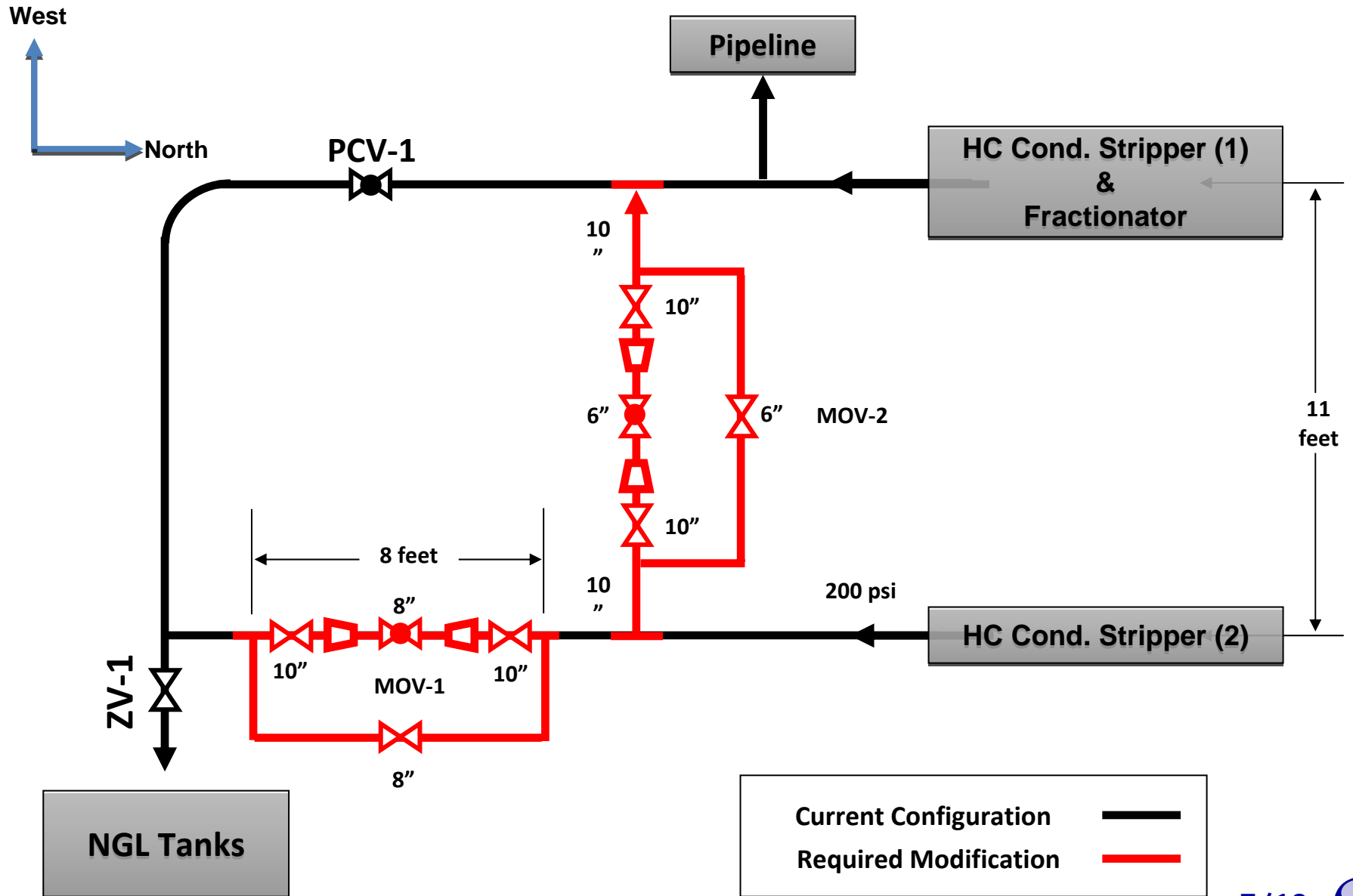
Comparison of Current & New Changes

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# Required Modifications (1)



# Required Modifications (2)



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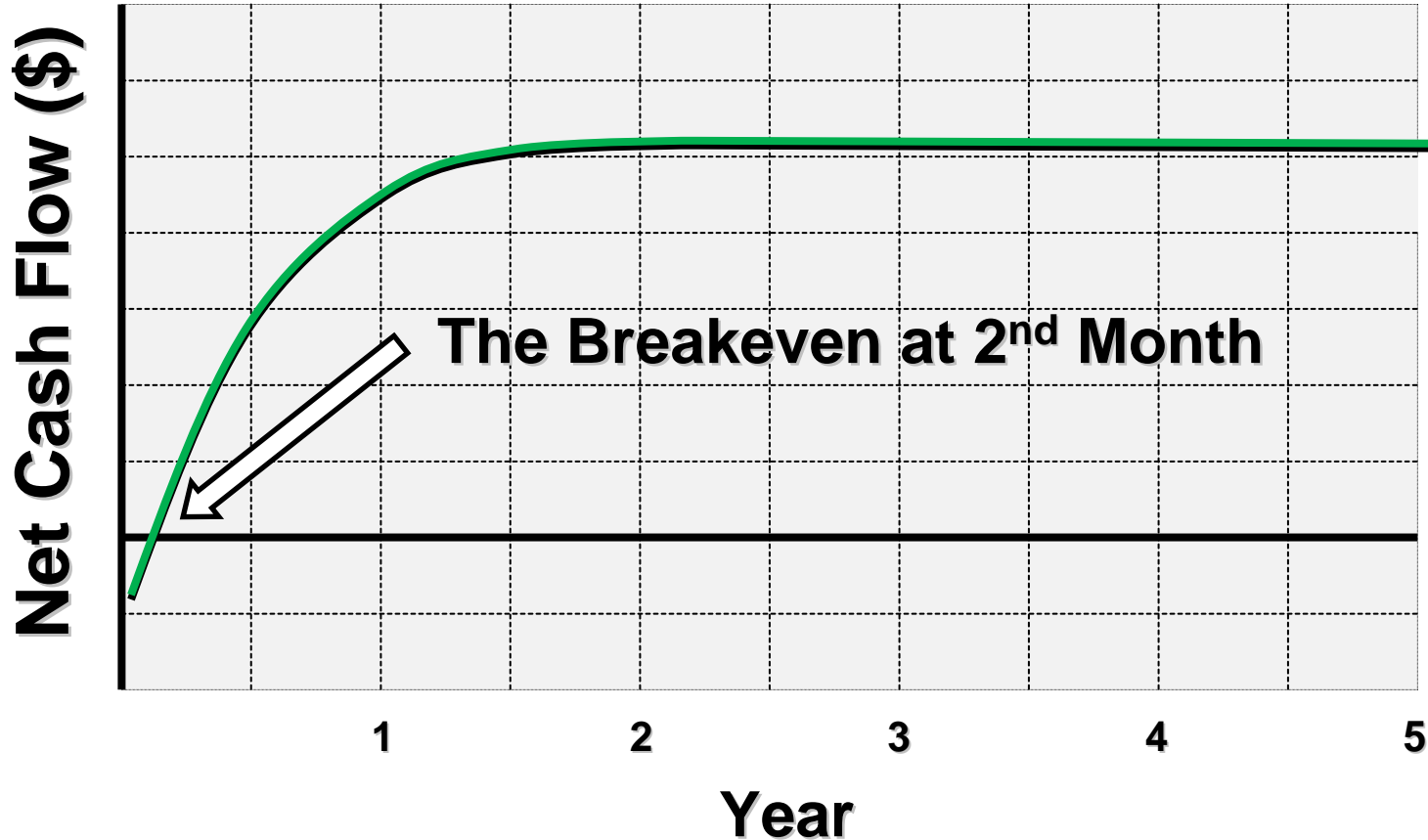
**Financial Analysis**

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# Financial Analysis

$$\frac{\text{Modification Cost (\$)}}{\text{Revenue (\$)}} = 17\%$$



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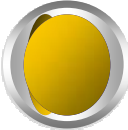
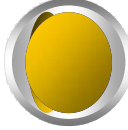
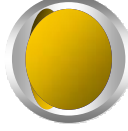
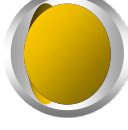
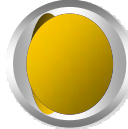
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**Comparison of Current & New Changes**

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# Comparison of Current & New Changes

	DESCRIPTION	EXIST	NEW
	Vibration & Noise on LCV-1	Yes	No
	Keeping Pipeline Pressure < 450 psi	No	Yes
	Energy Saving (Revenue)	No	Yes
	Required Modifications	No	Yes
	Pump (6/7) Life-Time Increment	No	Yes





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



# Summary

- Vibration & Noise on LCV-1 were the trigger factors of this initiative.
- System inherited these problems due to the expansion of the NGL producer and overlooking existing system sizing and hydrolysis.
- This proposal will eliminate the vibration, noise and save \$.
- Reliability of NGL shipping pump will be improved.



# Questions



- 1/10 
- 2/10 
- 3/10 
- 4/10 
- 5/10 
- 6/10 
- 7/10 
- 8/10 
- 9/10 
- 10/10 

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# LCV-1 (High Differential Pressure)

