

**EXH. RJR-8C  
DOCKET UG-23 \_\_\_\_\_  
WITNESS: RONALD J. ROBERTS**

**BEFORE THE  
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND  
TRANSPORTATION COMMISSION,**

**Complainant,**

**v.**

**PUGET SOUND ENERGY,**

**Respondent.**

**Docket UG-23 \_\_\_\_\_**

**SEVENTH EXHIBIT (CONFIDENTIAL) TO THE  
PREFILED DIRECT TESTIMONY OF**

**RONALD J. ROBERTS**

**ON BEHALF OF PUGET SOUND ENERGY**

**REDACTED VERSION**

**MAY 25, 2023**

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**Presentation to the PSE Board of Directors**

**April 5, 2017**

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# LNG Facility Aerial Photos

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April 6, 2017

# Tacoma LNG plant construction progressing

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Aerial photo taken March 16, 2017 showing Tacoma LNG site. Site demolition is ~95 percent complete.



# Continued installation on piles in process area

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As of Thursday, March 30, approximately 1,040 piles have been installed and ground improvement is 50 percent complete.



# Control building and site of Tacoma Power substation

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**Presentation to the PSE Board of Directors**  
**June 22, 2017**



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# Tacoma LNG Project

Board Update



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June 22, 2017

## Requested board action

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Informational update. No action requested at this time.

Updates include:

- Construction status, project cost forecast and schedule
- Current project risks and mitigation plans
- Marketing update

## Previous board interaction

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- On September 22, 2016, the board approved the project, subject to two final key authorizations.
- The latter of the two authorizations was received on October 31, 2016 and the project has moved into the construction phase.

# LNG project overview

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**Project in-service:** October 2019

**LNG liquefaction capability:** 250,000 gallons/day

**On-site storage:** 8 million gallons

**Vaporized gas injection capability (into PSE's system)<sup>1</sup>:** 66,000 Dth/day

**Gas delivery to PSE's system:**  
Northwest Pipeline

**Electricity for facility:** Provided by Tacoma Power under its contract industrial service

**Total Project CapEx<sup>2</sup>:** \$371 million



*Tacoma LNG facility in Tacoma, Washington*

<sup>1</sup> To meet peak-day demand of PSE retail gas customers

<sup>2</sup> Includes capital spend for facility and distribution upgrades

# Overall project budget remains on target; only projected overage due to construction overhead rate

2017 budget	2017 YTD actual	2017 outlook	Project budget	Project TD actual	Project outlook
\$164.6 M	\$48.3 M	\$182.8 M	\$371.2 M	\$106.5 M	\$376.9 M

Contingency analysis	(\$ thousands)
<b>Project contingency</b>	<b>\$19,252</b>
Committed contingency	
CBI fuel quality	(\$8,250)
CBI permitting support	(\$800)
CBI miscellaneous	(\$321)
Other miscellaneous	(\$4,109)
Project savings	\$1,994
<b>Remaining contingency</b>	<b>\$7,765</b>

- 2017 budget, actuals and outlook are as of the 4+8 outlook budgeting cycle.
- The 2017 4&8 outlook of \$182.9M is \$18.3M over the 2017 budget due to: 1). an increase in the construction overhead rate applied to the project (~\$2.6M); and 2). changes to the EPC schedule which shifted budgeted spend from 2018 into 2017. The cost to complete has increased by \$5.7M due to an increase in the construction overhead rate.



# Project remains on schedule to be in-service in late 2019



# Ground improvement work complete and CBI mobilized on site

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## Facility site

- ✓ Demolition and abatement work complete
- ✓ Installation of 1,870 grout piles complete
- CBI mobilized on site; tank foundation work began June 1, 2017
- Marine demolition on Hylebos waterway scheduled for July 2017

## TOTE terminal

- Construction began in April 2017 and will continue through Q1 2019
- ✓ Installation of 143 grout piles is complete
- Marine construction scheduled for August 15, 2017 to February 2018
- Tunneling for LNG pipeline scheduled for Q4 2017


## Distribution upgrades

- Upgrade work commenced May 2017
- Directional drill on site for initial drilling from facility site toward Taylor Way; pipeline work will continue along Taylor Way

*Construction photographs and additional details related to construction status are provided in the appendix.*





# Issue: Pipeline gas quality has changed

Issue	Mitigation	Status
<ul style="list-style-type: none"> <li>• Pipeline gas quality has changed over the past 12-18 months and is significantly different from the facility design basis.</li> <li>• Observations over the last 18 months have shown a steady rise of ethane, propane and heavier constituents displacing methane.</li> <li>• Absent a change to the facility design, the LNG fuel may not satisfy the TOTE Fuel Supply Agreement.</li> <li>• Without design modifications, one of three facility constraints are violated: the LNG methane number, the LNG production rate or production of excessive fuel gas in vapor form.</li> </ul>	<ul style="list-style-type: none"> <li>• CBI has been instructed to proceed under a change order to modify the facility design based on current pipeline gas quality.</li> <li>• The budgetary estimate for the change is \$8 million, which will be refined over the next couple of months.</li> <li>• Scope of change order includes:               <ul style="list-style-type: none"> <li>• Redesign of amine flash drum, enclosed ground flare and fuel gas separator</li> <li>• Modifications to piping, control valves, instrumentation, and electrical</li> <li>• New NGL stored liquids heater and effluent BTU analyzer</li> <li>• Additional engineering and project management</li> </ul> </li> <li>• Some savings may be realized if credits can be realized for redesigned equipment; budgetary estimate assumes no credits.</li> </ul>	

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# Issue: Special interest group opposition continues

Issue	Mitigation	Status
<ul style="list-style-type: none"> <li>• RedLine Tacoma continues to oppose the LNG Project, primarily via social media and public comment</li> <li>• RedLine has joined forces with Tacoma Direct Action and Rising Tide Seattle, although there is much overlap of membership</li> <li>• Current strategies appear to be focused on contacting permitting agencies, public protests, and civil disobedience</li> <li>• Protestors recently entered the site and chained themselves to the auger</li> </ul> 	<ul style="list-style-type: none"> <li>• PSE mitigation plan continues to focus on proactive communications online and with elected officials and other key stakeholders</li> <li>• Following recent civil disobedience, PSE reviewed and affirmed its site and project security plans and protocols</li> </ul>	


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that has been removed.*

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REDACTED VERSION

# Issue: PSCAA air permit requirements

Issue	Mitigation	Status
<ul style="list-style-type: none"> <li>• LNG facility is considered a minor source and project plan is based upon securing notice of construction/order of approval permit from Puget Sound Clean Air Agency during the early phase of the EPC work</li> <li>• Timeline for minor source permits from agency is usually about 6 months</li> <li>• Permit must be in place prior to start of construction work related to emitting sources within the facility, including foundations</li> <li>• Emitting sources include:               <ul style="list-style-type: none"> <li>• Gas pretreatment</li> <li>• Gas liquefaction</li> <li>• Gas vaporization</li> <li>• Enclosed ground flare</li> <li>• Compressor building</li> <li>• LNG pipeline to TOTE terminal</li> <li>• LNG bunkering equipment</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Permit application submitted in May 2017</li> <li>• Additional air emission modeling occurring over next two weeks with completed permit application anticipated in June 2017</li> <li>• In anticipation of close monitoring of agency by RedLine and Puyallup Tribe, PSE permitting and legal team working closely with Puget Sound Clean Air Agency to ensure accurate communications and timely permit issuance</li> </ul>	

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# Issue: Local permitting challenges and CBI change order

Issue	Mitigation	Status
<ul style="list-style-type: none"> <li>• City of Tacoma will need to issue building permits for the facility during the course of design and construction due to schedule</li> <li>• City review anticipated to be thorough and closely monitored by RedLine</li> <li>• City agreed to break the building permits down into multiple packages so that permits can be issued piecemeal, consistent with the EPC schedule</li> <li>• Tacoma Fire Department is requiring its own independent review of compliance with National Fire Protection Association 59A, in addition to UTC review</li> <li>• CBI has submitted a change order for \$859K for additional support for obtaining local permits</li> </ul>	<ul style="list-style-type: none"> <li>• PSE and CBI permitting teams have set up weekly project permitting meetings with the City of Tacoma staff to review any potential issues and status</li> <li>• PSE agreed to fund a consultant to assist Tacoma Fire Department in their fire code review of the facility, and offered a similar arrangement with the city for permit review, to be implemented, if necessary</li> <li>• PSE requested additional information from CBI regarding the basis of their original permitting support efforts and anticipates further discussions and negotiations on this issue</li> </ul>	

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# Appendix

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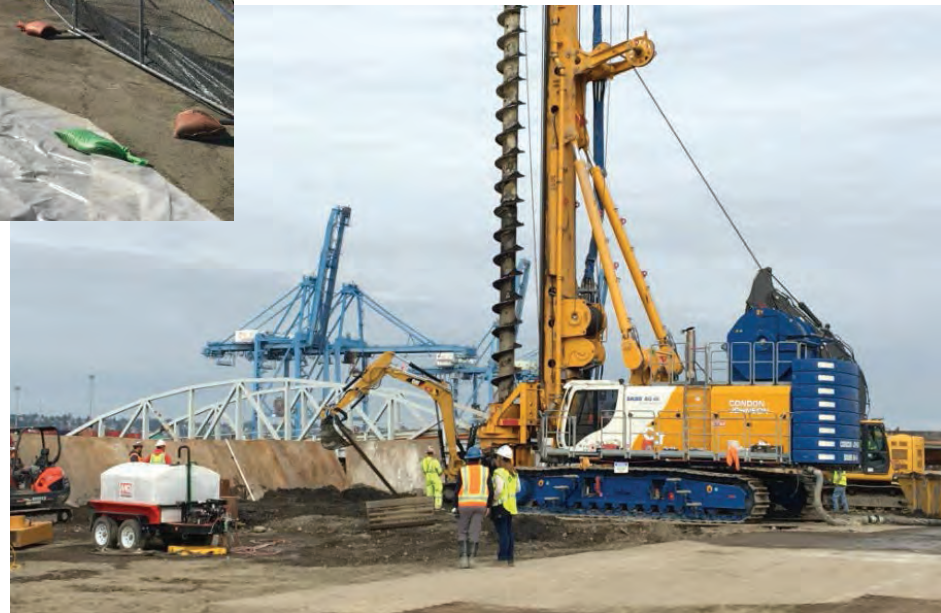
- Site construction photos and status details
- Puget LNG marketing opportunities

# Construction Update – TOTE terminal



- 143 grout piles have been installed at TOTE terminal where LNG pipe and loading pier will be constructed

- Minimal disruption to TOTE operations with equipment moved onto site at night
- Construction operations suspended while ships are in port



# Construction Update – TOTE terminal

- Construction at the Tote terminal started in April 2017
- Temporary sheet pilings installed to protect Blair waterway while grout piles are installed



- Marine construction work begins August 15, 2017
  - Work to be completed by February 2018
  - Topside work will continue through Q1 2019
- Tunneling for LNG pipeline scheduled for 4Q 2017



# Construction Update – Facility site



- CBI mobilized on site
- Marine demolition on Hylebos waterway scheduled for July 2017
  - Hylebos pier shown in photo below

- Tank foundation work began June 1, 2017
  - Photo above shows transfer pads where tank and flare will be constructed

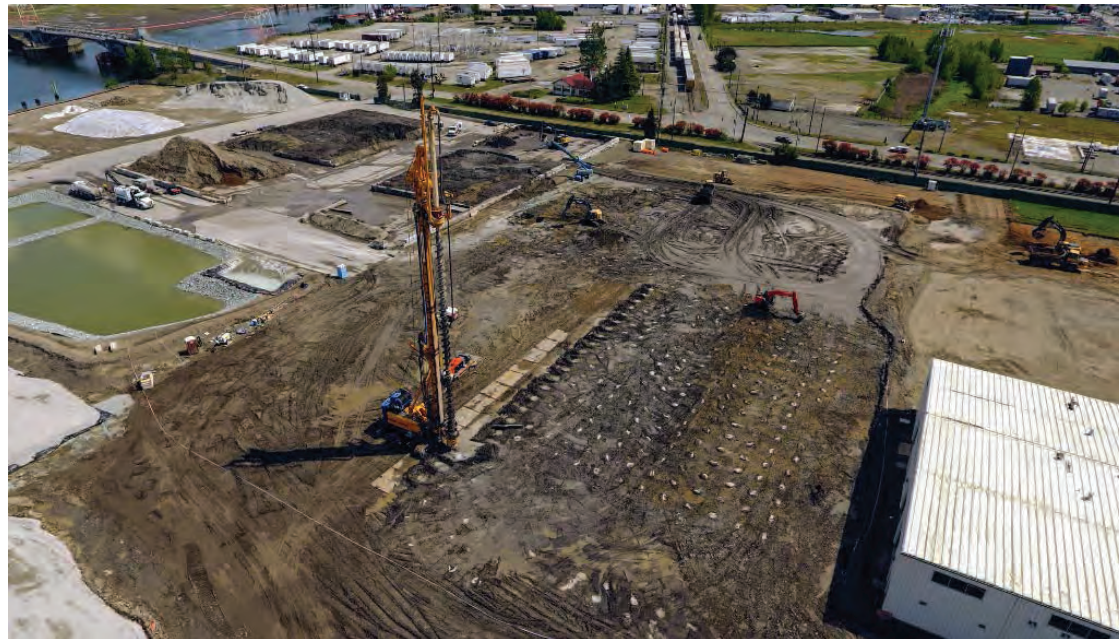




# Construction Update – Facility site

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- Site demolition and abatement work complete
- Major effort since November 1, 2017 start date has been on grout pile installation
- 1,870 grout piles have been installed with work completed ahead of schedule  
(Tops of pilings can be seen in the photo below)



## Construction Update – Distribution upgrades

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- Distribution upgrade work commenced May 2017
- Directional drill on site and initial drilling is from facility site towards Taylor Way
- Pipeline work will continue along Taylor Way



**Presentation to the PSE Board of Directors**  
**November 2, 2017**

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# Tacoma LNG Project

Board of Directors Budget Update



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November 2, 2017

# Original project contingency has been exceeded

		(A)
<b>Contingency analysis</b>		<i>(\$ thousands)</i>
1	<b>Project contingency</b>	<b>\$19,252</b>
2	Committed contingency	
3	CBI fuel quality	(5,432)
4	CBI air permit delay	(7,689)
5	CBI flare and vaporizer changes (ROM estimate)	(2,500)
6	CBI permitting support	(729)
7	CBI LNG cryogenic pipeline (ROM estimate)	(2,754)
8	CBI miscellaneous	(724)
9	Legal costs for tribal appeals	(1,662)
10	Development phase overrun	(2,201)
11	Project management	(2,600)
12	Other miscellaneous	(2,016)
13	Project savings	<u>2,411</u>
14	<b>Remaining contingency</b>	<b>(\$6,645)</b>

## Additional project budget request includes current overrun and additional contingency

	(A)	(B)
<b>Tacoma LNG Additional Budget Request</b>	<i>(\$ thousands)</i>	
1 <b>Current Contingency Deficit</b>		<b>\$6,645</b>
2 <b>Contingency on Cost to Finish</b>		
3     CBI (@ 2%)	\$2,544	
4     CBI LNG pipeline (@ 25%)	3,186	
5     Other construction (@ 10%)	1,273	
6     Project management and outside services (@ 10%)	<u>1,098</u>	<b>8,101</b>
7 <b>Sales Tax Increase</b> (9.6% to 10.1% effective 4/1/2017)		<b>1,456</b>
8 <b>Project Construction Overhead</b>		
9     Change of overhead rate (3% to 5%)	\$5,700	
10     Incremental overhead on budget increase	<u>1,460</u>	<b>7,160</b>
11 <b>Subtotal</b>		<b>23,362</b>
12 <b>AFUDC/IDC Increase</b>		<u><b>6,294</b></u>
13 <b>TOTAL</b>		<b>\$29,656</b>

Total project budget increase of \$29.6M; \$11.0M to PSE, \$18.6M to PLNG; PLNG unlevered IRRs decrease from 10.1% to 9.9%

	(A)	(B)	(C)
	Board Approved Budget	Requested Revised Budget	Variance
1 <b>Tacoma LNG Capital Budget (\$ millions)</b>			
2 Development	\$20	\$22	(\$2)
3 CBI EPC	197	\$214	(17)
4 Miscellaneous Construction	55	\$58	(2)
5 PM & Outside Services	16	\$22	(5)
6 Insurance	2	\$1	1
7 Sales Tax	14	\$15	(1)
8 Contingency	19	\$8	11
9 Construction OH's	10	\$17	(7)
10 <b>LNG FACILITY TOTAL</b>	<b>\$332</b>	<b>\$356</b>	<b>(\$23)</b>
11 Gas System Upgrades	\$31	\$31	\$ -
12 Contingency	4	4	-
13 Permitting Mitigations	4	4	-
14 <b>GAS SYSTEM IMPROVEMENTS TOTAL</b>	<b>\$39</b>	<b>\$39</b>	<b>\$ -</b>
15 <b>PROJECT CAPITAL TOTAL</b>	<b>\$371</b>	<b>\$395</b>	<b>(\$23)</b>
16 <b>AFUDC / IDC</b>	<b>\$51</b>	<b>\$57</b>	<b>(\$6)</b>
17 <b>CLOSING GROSS PLANT</b>	<b>\$422</b>	<b>\$451</b>	<b>(\$29)</b>

# Tank foundation is complete and steel is being installed

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# Loading platform on Blair Waterway is under construction

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# Construction is also underway on the Tacoma Power substation

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# 4-mile, 16" pipeline work is complete

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# Frederickson gate station work is complete

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# Regulated allocation of project budget increases by \$11.0 million

Tacoma LNG Capital Budget (\$000) PSE ONLY		(A) Board Approved Budget	(B) Requested Revised Budget	(C) Variance
<b>LNG Plant</b>				
1	Liquefaction	\$8,701	\$9,534	(\$833)
2	Storage	87,139	87,439	300
3	Bunkering	-	-	-
4	Truck Loading	540	535	5
5	Vaporization	20,220	20,001	219
6	Common	25,194	32,127	(6,733)
7	<b>Plant Total</b>	<b>\$141,795</b>	<b>\$149,636</b>	<b>(\$7,842)</b>
8	<b>Distribution Upgrades</b>	<b>\$38,800</b>	<b>\$38,800</b>	<b>\$ -</b>
9	<b>AFUDC</b>	<b>\$27,570</b>	<b>\$30,738</b>	<b>(\$3,168)</b>
10	<b>TOTAL</b>	<b>\$208,164</b>	<b>\$219,174</b>	<b>(\$11,010)</b>

# Unregulated allocation of project budget increases by \$18.6 million

Tacoma LNG Capital Budget (\$000) PE/PLNG ONLY		(A) Board Approved Budget	(B) Requested Revised Budget	(C) Variance
<b>LNG Plant</b>				
1	Liquefaction	\$80,694	\$85,807	(\$5,113)
2	Storage	23,514	23,243	271
3	Bunkering	42,245	42,778	(533)
4	Truck Loading	10,263	10,168	95
5	Vaporization	-	-	-
6	Common	33,862	44,089	(10,227)
7	<b>Plant Total</b>	<b>\$190,578</b>	<b>\$206,085</b>	<b>(\$15,507)</b>
8	<b>Distribution Upgrades</b>	-	-	-
9	<b>AFUDC</b>	<b>\$23,109</b>	<b>\$26,235</b>	<b>(\$3,126)</b>
10	<b>TOTAL</b>	<b>\$213,687</b>	<b>\$232,319</b>	<b>(\$18,632)</b>

**Presentation to the PSE Board of Directors**  
**January 18, 2018**

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# Tacoma LNG Project

Update, Risk Strategy & Mitigation Plan

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January 2018

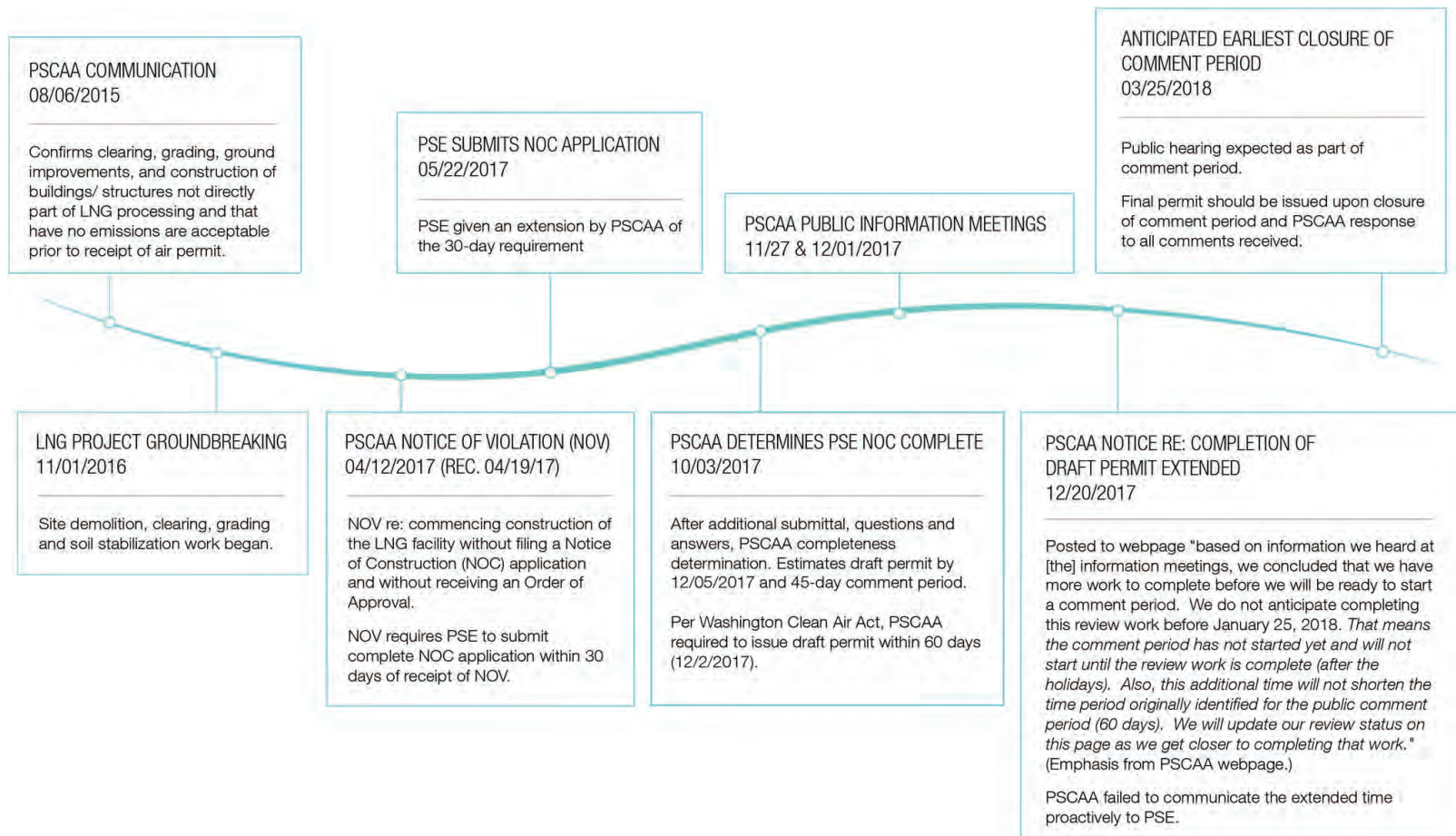


# LNG project permitting status

## Environmental Review, Permit and Approval Status - December 2017

REVIEW/PERMIT/APPROVAL	AGENCY	STATUS
Franchise agreements--pipeline	Fife	Current
Franchise agreements--pipeline	Pierce Co	Current
Franchise agreements--pipeline	Tacoma	Current
SEPA	Tacoma	Complete
Shoreline Permit	Tacoma	Complete
Right of Way Agreements (street use)	Tacoma	Complete
Special Discharge Authorization--plant	Tacoma	Complete
Rail crossing permit	Tac Rail	Complete
Right of Way Agreements (street use)	Fife	Complete
LNG Pipeline Waiver	WUTC/PHMSA	Complete
Hydraulic Project Approval-plant	WDFW	Complete
Hydraulic Project Approval-pipeline	WDFW	Complete
Individual 401 Certification	Ecology	Complete
Coastal Zone Management Act consistency determination	Ecology	Complete
NPDES Stormwater Construction Permit--plant	Ecology	Complete
NPDES Stormwater Construction Permit--pipeline	Ecology	Complete
Individual 404/Sec 10	USACE	Complete
Marine Mammal Monitoring Plan	USACE	Complete
Letter of Recommendation	USCG	Complete
<b>Numerous building permits--plant, currently 45 total, 41 submitted, 29 received</b>	<b>Tacoma</b>	<b>In-process</b>
<b>Right of Way Agreements (street use)</b>	<b>Pierce Co</b>	<b>In process</b>
<b>Building permits--pipeline</b>	<b>Pierce Co</b>	<b>In-process</b>
<b>WA State Highway crossing permit</b>	<b>WSDOT</b>	<b>In-process</b>
<b>Minor New Source Notice of Construction</b>	<b>PSCAA</b>	<b>In-process</b>
Continuous Oversight of Plant Design, Construction and Operations	WUTC/PHMSA	On-going

# Timeline of key PSCAA events



# PSCAA permit risk

Risk	What (define risk)	Probability (high/medium/low)	Magnitude (high/medium/low)	Mitigation Plan to address risk
Regulatory	• PSCAA permit denied	Low	High	<ul style="list-style-type: none"> <li>Retained consultant to undertake independent review of permit</li> <li>Retained Dennis McLerran, former PSCAA executive director, EPA Region X director, and current PLNG board member, for advice and dialogue with current PSCAA director</li> <li>Maintaining active and ongoing dialogue with PSCAA personnel from permitting engineer to agency director and including agency board of directors</li> </ul>
	• PSCAA reopens SEPA (major delay)	Low	High*	
	• PSCAA permit delayed (minor delay)	High	Medium*	

\* Estimated financial impact of delay is approximately \$500K/week.



# Safety and security plan

## Recommended next steps

- Install an intrusion detection system along the perimeter fence to provide alarm notification to the Security Command Center (SCC)—**under evaluation**
- Work with City of Tacoma to block protestor access to facility during incidents—**implemented**
- Install Pan Tilt Zoom (PTZ) cameras to assist SCC operators in verifying alarm event and status—**in progress**
- Provide camera access to the Port of Tacoma Police (per request) so they can better monitor facility and surrounding areas
- Schedule TPD officers to provide 24-hour security at the site to maintain security of Gate 11—**implemented**
- Work with CBI on issues related to the existing camera system (e.g., access, reliability)—**in progress**



# Communications plan

## Next steps

### Update PSE messaging to address Tribal messages

- Land ownership – The Tacoma LNG facility is being built on land that has been clearly established through treaties and settlements as belonging to the Port of Tacoma.
- Meaningful consultation – PSE provided meaningful consultation to the Tribe for the Tacoma LNG project as is defined in treaties and settlements.

### Adjust the tone of overall PSE communications components

- Firm and respectful. PSE drives messages with serious tone, a real plan to improve environment, and respect for Tribe
- PSE is leader at table in addressing climate problems and the LNG facility is a key component.

### Get tested messages out to a regional audience

- Environmental benefits of LNG v. dirty bunker fuel, health benefits for workers, community, jobs
- Best, most viable solution in maritime is LNG
- Leverage de-carb messages
- PSE has a plan, opponents have rhetoric

### Bigger megaphone

- Increase media buy in Tacoma market.
- Additional earned and social media, briefings, guest speaker
- Expand media buy outside Tacoma area
- Coordinate with low carbon campaign launch in March

### Develop and launch third-party stakeholder messengers

- Raise other voices: surround and isolate opposition with third-party validators
- Unions, business community
- Deliver tested messages (e.g., union worker testimonial on improved health)at docks)
- Challenge opposition accusations

**Fueling a cleaner tomorrow**

Puget Sound Energy is bringing liquefied natural gas to the maritime industry at the Port of Tacoma. Switching from dirty bunker fuel to LNG will reduce greenhouse gases more than 30% and harmful particulates by over 90%—it's cleaner, safer and will improve the air quality for Tacoma's longshore workers.

Get the facts about PSE's LNG facility at [pse.com/tacomalng](http://pse.com/tacomalng)

**PSE PUGET SOUND ENERGY**

**New jobs and clean energy. Win. Win.**

**PSE LNG Facility**

**GET THE FACTS**

**PSE PUGET SOUND ENERGY**

**PSE's LNG facility will power TOTE vessels in our port.**

**Local. Safe. Clean.**

**MAKE THE SWITCH**

**PSE PUGET SOUND ENERGY**

# Government relations plan

## Recommended next steps

### **Executive-level contact between PSE and Puget Sound Clean Air Agency (Craig Kenworthy)**

- Insight Strategic Partners (Matt Steuerwalt & Marty Loesch) retained for on-going contact with Kenworthy.
- Dennis McLerran (former PSCAA director, EPA Region 10 administrator, and current PLNG board member) retained to provide additional counsel
- Arrange executive level meeting between PSE and Air Agency
- Key messages:
  - Health of the community
  - Public safety for our workers, activists and first responders

### **Engaging elected officials, PSCAA board and key stakeholders**

- Communicate impact of permit delay for project cost and schedule
- Reinforce messages around health and safety concerns as a result of air permit delays
- Reinforce LNG environmental benefits
- Educate on our overall environmental stewardship
- Clarify sovereignty claims
- Clarify PSCAA permit status and project permit status

### **Activate LNG stakeholder group**

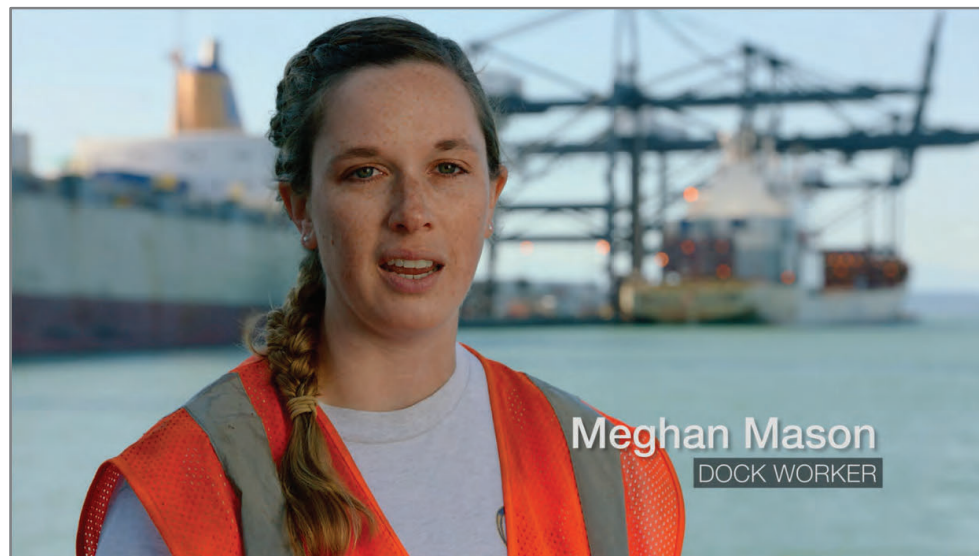
- Stand up a stakeholder group that is ready to engage
- Create name for group and establish regular meetings
- First meeting in late January will be a project update. Explain security, permitting, community and safety concerns
- Prepare stakeholders for PSCAA public comment period needs (letter submissions and attendance at public hearing)

### **Port business outreach**

- Contact Port of Tacoma business-affiliated groups to inform and engage around the tribe's latest sovereignty claim and Port policing issues
- Place for jobs (Tacoma Chamber, Propeller Club), maritime affiliated membership; John Wolfe Breakfast Club (CEOs of Port Business), meets quarterly or as needed

# Third-party voices

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# CBI EPC plan

## Recommended next steps

### Current issues

- **Safety and security** – CBI has contractual responsibility for site security and has implemented “typical” construction site measures, which are inadequate under current circumstances.
- **Air permit delays** – CBI has issued and PSE has accepted a change order to account for delays in receipt of the air permit through February. Based on more-recent updates from PSCAA, additional delay is expected.
- **Partnership** – CBI earns full margins on change orders, adversely impacting project budget.

### CBI engagement strategy

- **January 10** – Executive-level discussion between CBI VP of Security and PSE Director of Safety & Preparedness to discuss security plans and strategies
- **February 20** – Executive-level meetings between CBI Group Vice President and VP of Operations and PSE General Counsel, CFO, and Director of Strategic Initiatives to discuss improved partnering relationship on going-forward basis.





**Presentation to the PSE Board of Directors**  
**March 1, 2018**

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# Tacoma LNG Project

Discussion of Options



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March 1, 2018

# LNG project overview

## Site preparation

- Construction began 11/1/2016
- Demolition and ground stabilization work complete

## Full-containment storage tank

- All outer tank, inner-lining rings in place
- Roof raising scheduled for early March

## LNG cryogenic pipeline

- Entry to tunnel complete
- Boring scheduled to commence in March

## Blair Waterway fueling pier

- All piles installed
- First deck pour complete

## Gas distribution system upgrades

- Frederickson gate station and 4-mile 16" pipeline complete

## Tacoma Power substation

- Civil work complete
- Transformers set
- Steel erection in progress



## Capital Expenditures – Inception to Date\* (\$000)

LNG facility	\$205,891
Gas system upgrades	<u>26,802</u>
Subtotal	\$232,693
AFUDC/IDC	<u>14,339</u>
Total	\$247,032

\* - Actuals through January 2018 plus estimate for February 2018



PRIVILEGED AND CONFIDENTIAL – PREPARED AT DIRECTION OF COUNSEL

## Quick update: What we know

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- PSCAA announces decision to prepare SEIS evaluating GHG lifecycle emissions, resulting in project delay
- PSCAA issues RFP for SEIS consultant, with an October 31, 2018 completion date
- PSE notifies CBI of force majeure event; CBI rejects
- CBI providing estimates for alternative construction scenarios
- Construction work underway on LNG storage tank, Blair fueling pier, LNG cryogenic pipeline boring, and electric substation
- Construction work on hold for emitting equipment (LNG processing) until receipt of PSCAA NOC
- PSE provides TOTE with term sheet amendment to fuel supply agreement
- Coordination between PSE & Saltchuk (TOTE) on outreach and communication on importance and value of project
- Continued support of local electeds and labor



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## PSE management recommends a “modified construction” option

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- Preserves ability to switch to other options as the situation changes whereas other options limit PSE’s flexibility
- Modified construction will enable PSE to preserve all legal options with respect to PSCAA and CB&I
- Incremental spend in 2018 for modified construction (as compared to pause and wait) is \$21.1 MM with \$7.6 MM of that difference occurring in the second half of the year
- PSE will monitor checkpoints in PSCAA SEIS and air permit process and revisit this decision as appropriate



# An array of alternative construction options exist

Work scope	Modified construction	Pause and Wait	Termination	Completion timing
Storage tank				
• Roof raise	X	X		March 2018
• Complete tank	X			June 2019
• Demolition			X	September 2019 <sup>1</sup>
LNG cryogenic pipeline				
• Tunnel boring and casing placement	X			July 2018
• Site restoration			X	December 2018 <sup>1</sup>
Blair Waterway fueling pier				
• Finish concrete decking	X	X		April 2018
Tacoma Power substation				
• Complete substation	X	X		July 2018
Forecasted spend				
• 2018 YTD	\$20,434	\$20,434	\$20,434	
• 2018 Q1 & Q2	\$46,821	\$33,295	\$35,359	
• 2018 calendar year	\$74,340	\$53,242	\$97,854	

<sup>1</sup>Tank demolition and site restoration anticipated to take six to nine months from termination date.

- CB&I is currently evaluating options that correspond to modified construction and Pause & wait scenarios
- PSE legal options with respect to CB&I provide leverage to negotiate these two alternatives

\* Financial assumptions:

- Included budget numbers are estimated by PSE Management, with refined budget numbers currently being estimated by CB&I
- 2018 distribution work may be moved to 2019, depending on in-service need and construction schedule
- 2018 capital at risk (plant + distr)
- Excludes AFUDC



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# Modified construction option has least financial impact

Construction options		
Modified construction	Pause and Wait	Termination
Total project cost (\$,000):	Total project cost (\$,000):	Total project cost (\$,000):
Plant \$366,498	Plant \$376,767	Plant \$275,194
Gas system upgrades <u>38,800</u>	Gas system upgrades <u>38,800</u>	Gas system upgrades <u>37,703</u>
Subtotal \$405,298	Subtotal \$415,567	Subtotal \$312,897
AFUDC <u>77,700</u>	AFUDC <u>69,000</u>	AFUDC <u>16,500</u>
<b>Project total \$482,998</b>	<b>Project total \$484,567</b>	<b>Project total \$329,397</b>
	<b>Additional OpEx in 2018 due to delay (\$,000): \$4,140</b>	<b>Capital at risk (\$,000): \$312,897</b>
	<b>AFUDC lost due to delay (\$,000): \$8,700</b>	



# Prudency Analysis Indicates Strong Case for Management Recommended Option

Construction options		
Modified construction	Pause and Wait	Termination
<ul style="list-style-type: none"> <li>Assumes PSCAA permit issued in early 2019</li> <li>Prudence analysis indicates strong case under the modified construction option</li> <li>High risk for recovery of 2018 incremental spend if permit not issued</li> </ul>	<ul style="list-style-type: none"> <li>Updated prudence analysis will be needed and conducted confirmation prior to construction restart</li> <li>Lower 2018 incremental spend on project than Modified Construction option, at risk if permit not issued</li> </ul>	<ul style="list-style-type: none"> <li>High risk for recovery of any investments made prior to termination decision</li> </ul>



# CB&I contractual terms provide flexibility and negotiating leverage for PSE

Construction options		
Modified construction	Pause and Wait	Termination
<ul style="list-style-type: none"> <li>• PSE and CB&amp;I agree to modify the existing work schedule using change order procedure in the contract.</li> <li>• Work on “emitter” aspects of the project await issuance of the air permit, with parties agreeing up front on an escalation rate or cost-adder applicable to the delayed work, depending on the length of the delay.</li> <li>• Formal suspension is not triggered, thus avoiding giving CB&amp;I a right to terminate after 180 days.</li> </ul>	<ul style="list-style-type: none"> <li>• Subsequent to PSE submitting notice of force majeure, we have initiated discussions with CB&amp;I to explore options as to work scope, schedule and cost.</li> <li>• PSE retains both its right to “suspend” work under the contract or to terminate for convenience. Should PSE choose to suspend all work , CB&amp;I has the right to terminate if such suspension has not been lifted after 180 days.</li> <li>• Should PSE suspend all work and subsequently learn that the air permit will not be issued (or other rationale to terminate exist), we could then terminate for convenience, as above.</li> </ul>	<ul style="list-style-type: none"> <li>• PSE exercises right to terminate EPC contract for convenience.</li> <li>• PSE to pay all CB&amp;I costs incurred to the date of termination plus \$250,000. Because amounts paid to date may actually exceed costs due to front-loading, there is at least a possibility that no further amounts would be payable to CB&amp;I.</li> </ul>



# Modified construction option will provide assurance to TOTE that they can rely upon PLNG for LNG fuel

Construction options		
Modified construction	Pause and Wait	Termination
<ul style="list-style-type: none"> <li>If PSE and TOTE do not amend the current contract, it is likely that delay liquidated damages payable to TOTE will start to accrue prior to ultimate COD. Assuming a 12 month delay in COD, Delay LDs estimated to be approximately \$2.4 million. However, any further delay by TOTE in having its ship ready for fueling would reduce this amount, possibly reversing it altogether.</li> <li>If current contract is amended to, among other things, push out dates by which TOTE must take fuel and PLNG must deliver fuel, no delay LDs would accrue.</li> </ul>	<ul style="list-style-type: none"> <li>Same consequence as the “modified construction” scenario.</li> </ul>	<ul style="list-style-type: none"> <li>Liquidated damages would be due. Amount payable dependent upon TOTE’s ability to take fuel. PSE’s exposure estimated to be approximately \$2.4 million (contractual limit is \$15 million).</li> <li>TOTE would have to facilitate the delivery of LNG via bunker barge (which currently does not exist) from Fortis BC or use Marine Gas Oil (MGO) to fuel its ships at a substantial price premium to their planned use of LNG (roughly \$12 million additional per year at full volume).</li> </ul>



# Port of Tacoma lease: Modified construction and pause and wait options have least impact on PSE

Construction options		
Modified construction	Pause and Wait	Termination
<ul style="list-style-type: none"> <li>No additional risk arises under the lease in the modified construction option, assuming ultimate issuance of the air permit. The operational term of the lease will not be shortened by the extended construction period.</li> <li>However, if no air permit is issued, termination will be necessary, with the consequences already identified.</li> </ul>	<ul style="list-style-type: none"> <li>Same consequence as the “modified construction” scenario.</li> </ul>	<ul style="list-style-type: none"> <li>Requires termination of the 25-year (+) term lease with the Port. PSE would terminate claiming “frustration of purpose,” a common law principal. The Port could oppose such a claim, possibly resulting in litigation. Any further rent amounts due to the Port would depend upon its outcome.</li> <li>Upon termination of the lease PSE is required to return the premises without above-grade improvements, which would require de-construction of the storage tank.</li> </ul>



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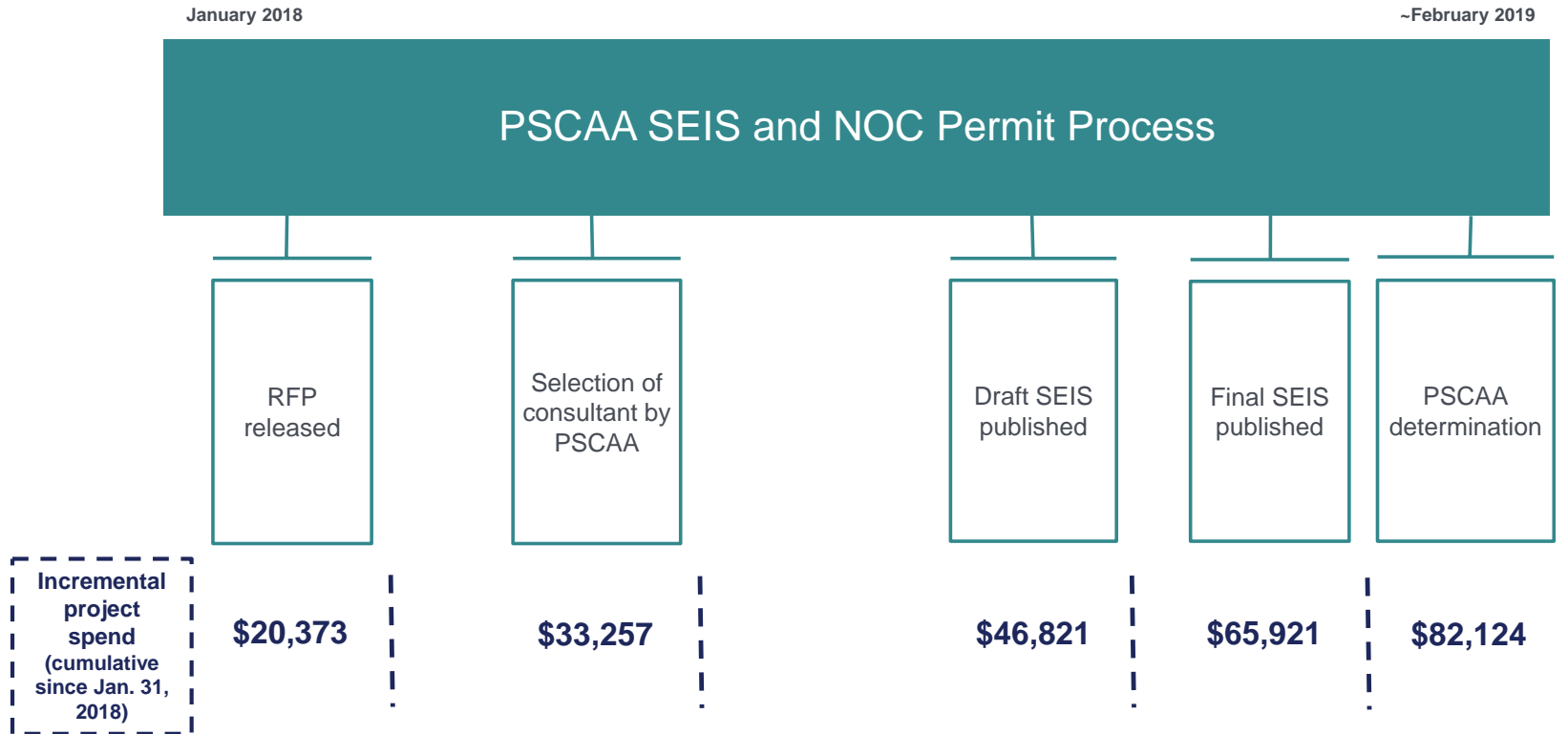
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# Modified construction option – checkpoints

*PSCAA process will provide checkpoints for PSE to change execution option*



**\* Financial Assumptions:**

- Included budget numbers are estimated by PSE management, with refined budget numbers currently being estimated by CBI.
- Assumes modified construction cash flows
- 2018 distribution work may be moved to 2019, depending on in-service need and construction schedule
- 2018 incremental cumulative capital at risk (plant + distr)
- Excludes AFUDC



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# Enhanced outreach and communications

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## Key messages:

- PSE's commitment to LNG, improving air quality and providing economic benefits to the local area and region
- Reiterate the benefits of the project to counter misinformation

## Key tactics:

- Continue Tacoma and expanded area media messaging
- Offer and conduct project tours for elected officials, their staff and local media



## Recommendation & discussion

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PSE management recommends “modified construction” alternative



# Appendix

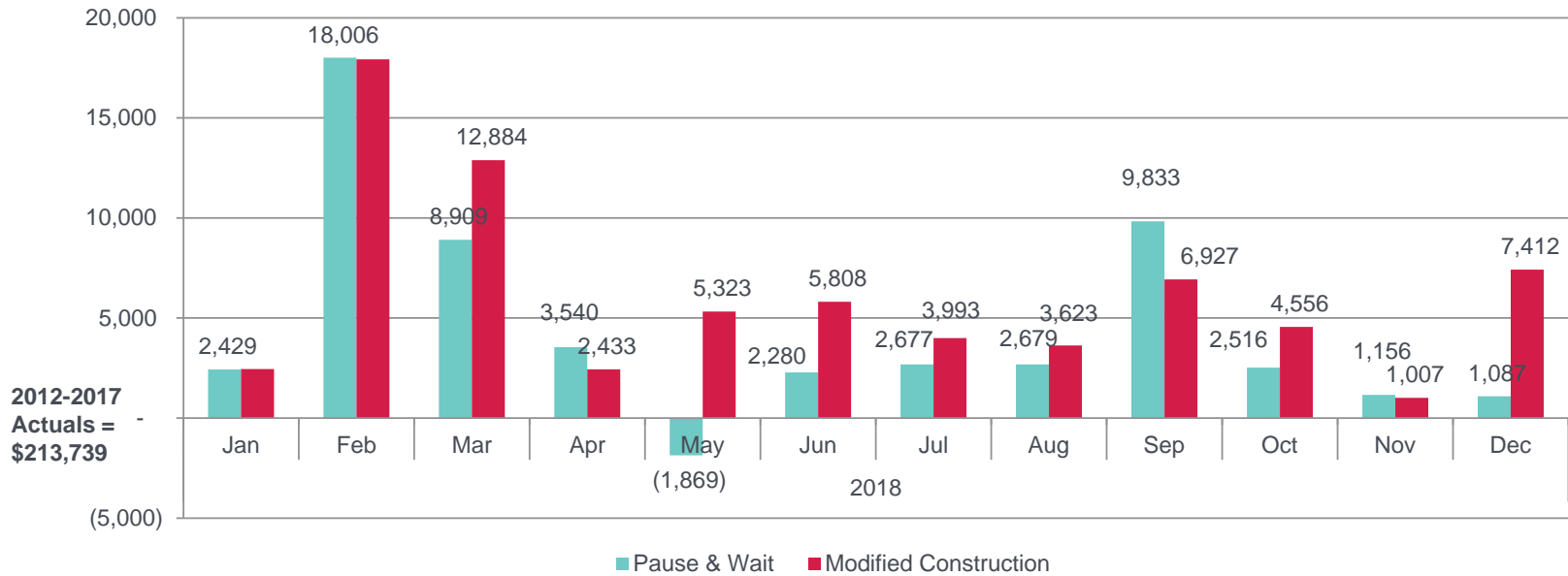
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- Report card: 2018 cash flows
- Project permitting status
- Project support and opposition landscape
- Other fossil fuel projects facing challenges
- Communications plan
- Outreach plan
- Report card: Resource need and alternatives
- Report card: Physical security plan
- Fuel Supply Agreement: TOTE proposed contract amendment summary



# Report card: 2018 cash flows

2018 monthly spend by option (\$000)



## Milestones (PSE assumed timing)

Q1	Q2	Q3	Q4	Q1
<ul style="list-style-type: none"> <li>✓ Consultant RFP published</li> <li>✓ Consultant Chosen</li> </ul>	<ul style="list-style-type: none"> <li>✓ Draft SEIS published</li> </ul>	<ul style="list-style-type: none"> <li>✓ End SEIS public notice/hearing</li> </ul>	<ul style="list-style-type: none"> <li>✓ Publish SEIS</li> <li>✓ Draft NOC permit placed on public notice</li> </ul>	<ul style="list-style-type: none"> <li>✓ End NOC public notice/hearing</li> <li>✓ Issue NOC</li> </ul>



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# LNG project permitting status

*Other than air permit, risk of revocation of other permits is minimal given work already completed*

## Environmental Review, Permit and Approval Status – February 9 2018

- We've completed all land use permitting requirements
- Remaining permits are primarily building or right-of-way permits, which will be issued as long as the permit submittal meets code requirements
- PSCAA air permit process delayed by agency decision to prepare a Supplemental EIS.

REVIEW/PERMIT/APPROVAL	AGENCY	PERMIT STATUS	WORK STATUS
Franchise agreements--pipeline	Fife	Current	Complete
Franchise agreements--pipeline	Pierce Co	Current	Complete
Franchise agreements--pipeline	Tacoma	Current	Complete
SEPA	Tacoma	Complete	Complete
Shoreline Permit	Tacoma	Complete <sup>1</sup>	Ongoing
Right of Way Agreements (street use)	Tacoma	Complete	Complete
Special Discharge Authorization--plant	Tacoma	Complete	Ongoing
Rail crossing permit	Tac Rail	Complete	Complete
Right of Way Agreements (street use)	Fife	Complete	Complete
LNG Pipeline Waiver	WUTC/PHMSA	Complete	Complete
Hydraulic Project Approval-plant	WDFW	Complete	Complete
Hydraulic Project Approval-pipeline	WDFW	Complete	Complete
Individual 401 Certification	Ecology	Complete <sup>2</sup>	Complete
Coastal Zone Management Act consistency determination	Ecology	Complete <sup>2</sup>	Complete
NPDES Stormwater Construction Permit--plant	Ecology	Complete	Ongoing
NPDES Stormwater Construction Permit--pipeline	Ecology	Complete	Ongoing
Individual 404/Sec 10	USACE	Complete	Complete
Marine Mammal Monitoring Plan	USACE	Complete	Complete
Letter of Recommendation	USCG	Complete	Complete
Numerous building permits--plant, currently 45 total, 43 submitted, 33 received	Tacoma	In-process <sup>3</sup>	Ongoing
Right of Way Agreements (street use)	Pierce Co	In process <sup>4</sup>	Ongoing
Building permits--pipeline	Pierce Co	In-process <sup>5</sup>	Ongoing
WA State Highway crossing permit	WSDOT	In-process <sup>6</sup>	Ongoing
Minor New Source Notice of Construction	PSCAA	In-process	Pending
Continuous Oversight of Plant Design, Construction and Operations	WUTC/PHMSA	On-going	Ongoing

<sup>1</sup> Under appeal <sup>2</sup> Appeal dismissed <sup>3</sup> Statistics include building, demolition, site development, wastewater, mechanical and plumbing permits <sup>4</sup> For Golden Givens 1-mile section <sup>5</sup> Complete for Frederickson Gate Station; in progress for Golden Givens limit station <sup>6</sup> Complete for 4-mile; in progress for Golden Givens 1-mile section

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# Stakeholder feedback includes supporting and opposing perspectives

## The Seattle Times



### Seattle City Council should butt out of Tacoma's proposed natural-gas depot

By [Seattle Times editorial board](#)

The Seattle City Council should abandon a misguided crusade against a Tacoma natural-gas depot proposed by Councilmember Kshama Sawant.

Sawant last month proposed a resolution opposing the facility. The full council on Monday wisely paused for further consideration. It should reject the proposal and stay focused on Seattle's long list of challenges.

There are legitimate concerns about major new fuel terminals proposed along Washington waterways. Gov. Jay Inslee was right to reject one of these on Monday, an oil-by-rail terminal proposed at the Port of Vancouver on the Columbia River.

But the Tacoma project is something completely different, with environmental benefits that were lauded by Inslee and climate-change activists when it received state support in 2014.

The Tacoma project is not a refinery or an export facility. It's basically a depot, fed by an existing pipeline, to support the conversion of ships that burn dirty fuels to cleaner-burning liquefied natural gas.

Puget Sound Energy is building the facility to liquefy and store gas for ships, trucks and customers in the area. A primary user will be TOTE Maritime, a leader in efforts to reduce shipping emissions.

Inslee hailed the project in 2014, saying it was "the first time a tax incentive will be tied to concrete carbon-emission reductions," according to a story in [The News Tribune](#). Environmental group Climate Solutions' state director at the time said TOTE's conversion work "should be applauded."

The Tacoma facility is being constructed in a longtime industrial zone. The Puyallup Tribe of Indians relinquished rights to the area in a [landmark, \\$162 million settlement in 1988](#), clearing the way for the Port of Tacoma's expansion. The tribe later explored building a shipping terminal near the gas facility site.

During a lengthy environmental-review process, the tribe opposed the project, as did some others. Opponents are now focusing on the Puget Sound Clean Air Authority, which is seeking further review. The authority must be reasonable and keep in mind the reality that these ships will be fueled one way or another.

Both the authority and the Seattle council should avoid pandering to the extreme base seeking to block anything involving fuel, which is counterproductive and slows legitimate efforts to reduce emissions.

If anything, Seattle should be supportive of such projects. As a major port city, it should keep its options open for modern energy facilities that support the transition to a cleaner maritime industry.

## WASHINGTON TRIBES STAND WITH THE PUYALLUP TRIBE

Dear Governor Inslee,

We stand with the Puyallup Tribe in its fight to protect its people, land and water from the devastating effects of Puget Sound Energy's Liquefied Natural Gas facility. Developments such as the liquefied gas storage facility require government-to-government consultation with our sovereign tribal nations. The City of Tacoma's failure to properly consult with the Puyallup Tribe threatens the health, culture and livelihood of thousands of tribal members.

We applaud the Puget Sound Clean Air Agency's requirement to complete a Supplemental Environmental Impact Statement (SEIS). We are asking for your leadership and support to join us in demanding that the City of Tacoma, Department of Ecology, U.S. Army Corps of Engineers, and the PSCAA require PSE to cease all construction until the full environmental review of the project is completed and all permit requirements are satisfied. We join the Puyallup Tribe in calling on the Army Corps of Engineers to step in as the federal trustee responsible for protecting the Puyallup Tribe's trust and treaty protected resources.

The tribes of Washington have a long history of standing together to defend our lands and waters. We have sent a powerful message to state and federal governments, and industry, that we will not tolerate corporate development at any cost. Tribal unity led to a huge victory for sovereignty—the denial of permits for coal terminals at Cherry Point and Longview.

We have seen what happens when development at any cost takes place. U.S. tribes joined First Nations of Canada in strong opposition to the Keystone Pipeline. In November 2017, 210,000 gallons of crude oil leaked near the Lake Traverse Reservation, home of the Sisseton Wahpeton Oyate Tribe of South Dakota. Tribes have long warned that it is not if, but when, disaster will strike and threaten our way of life.

This project is no different and poses substantial human health and safety risks. The City of Tacoma stands to gain significant financial benefits from the development of this storage facility. But these potential profits do not release the city of their legal obligation to meaningfully consult with the Puyallup Tribe as a sovereign nation or comprehensively examine the risks associated with the Liquefied Natural Gas facility.

Washington Tribes, February 1, 2018



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# Report card: Resource need and alternatives

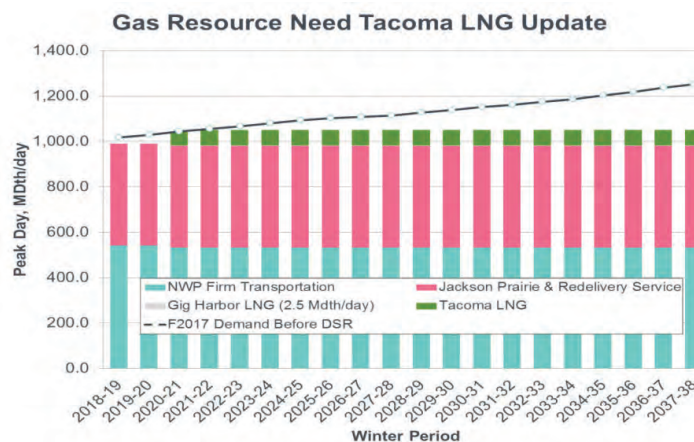
## 2015 IRP analysis (original analysis)

The 2015 IRP demonstrated a range of benefit from \$8m to \$104m

SCENARIO	Gas Portfolio Costs NPV (2016\$ in millions)		
	FULL LNG	NO LNG	Benefit / (Cost)
BASE	\$9,367	\$9,465	\$98
LOW	\$6,258	\$6,295	\$37
HIGH	\$12,963	\$13,052	\$89
BASE + LOW GAS	\$8,213	\$8,264	\$51
BASE + HIGH GAS	\$10,720	\$10,824	\$104
BASE+VERY HIGH GAS	\$11,906	\$11,995	\$89
BASE+NO CO2	\$7,776	\$7,846	\$70
BASE+HIGH CO2	\$10,466	\$10,565	\$100
BASE+LOW DEMAND	\$9,032	\$9,040	\$8
BASE+HIGH DEMAND	\$10,451	\$10,551	\$100

## Current base need forecast

Tacoma LNG meets peak resource need in the winter of 2020/21.



### F2016 analysis update

- Based on updated information on key assumptions including:
  - Gas sales peak load forecast (F2016)
  - Resource alternatives timing and pricing
  - Tacoma LNG Project costs
  - Long term gas prices
- The updated portfolio benefit of the Tacoma LNG Project versus No Project is estimated to be \$54.1m (in 2019 dollars)

### 2017 IRP analysis update (in progress)

- Updated prudency review is ongoing, however initial evaluation of the BASE scenario continues to deem the project prudent
- Updated analysis includes updates to load forecasts (2017F), resource alternatives timing and pricing, Increased project costs, and long term gas prices and the exclusion of project sunk costs.
- Further analysis is being conducted to measure the Benefit / (Cost) for additional scenarios (beyond the BASE scenario).

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# Report Card: LNG physical security plan – modification

*Security plan will be largely similar across alternatives*

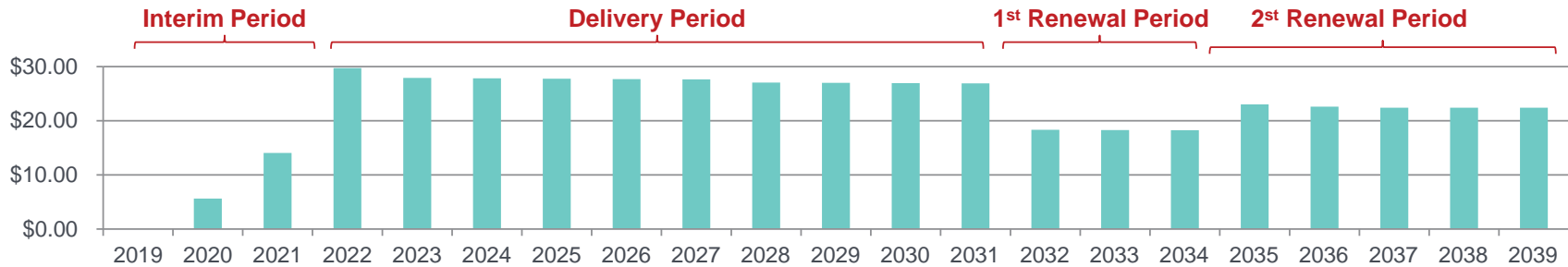
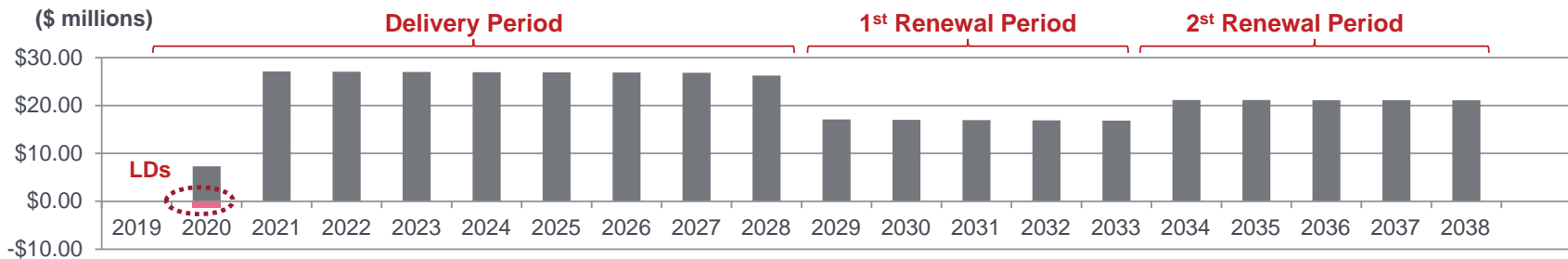
Construction option	CBI security guard 24x7	Security lighting	On-site Tacoma police patrol	Intrusion detection camera system	Surveillance camera monitoring
<b>Modified construction</b>	X	X	X	X	X
<b>Pause and wait</b>	X	X	X	X	X
<b>Termination</b>	X	X		X	X
<b>Comments</b>	Decision to retain guard service is CB&I	Already in place and is a deterrent	Could reduce TPD hours if pause and wait	System already installed, minimal costs to monitor	Required for verification of intrusion camera alarms



# TOTE proposed contract amendment summary

*Fuel Supply Agreement likely to be win-win for both PLNG and TOTE; PLNG will maintain its option by not executing an amendment prior to receipt of final air permit*

	Current	Amended (as proposed by PLNG)
Delivery Term	<ul style="list-style-type: none"> <li>Starts 1/1/2019, and runs 10 years.</li> <li>Effectively only 8.5 years due to project delays.</li> </ul>	<ul style="list-style-type: none"> <li>Starts 1/1/2022, and runs 10 years.</li> <li>Preserves entire 10 years.</li> </ul>
Liquidated Damages	<ul style="list-style-type: none"> <li>LD's assessed if TOTE is able to accept LNG before plant is operational.</li> </ul>	<ul style="list-style-type: none"> <li>LDs would not apply until 2022; no longer assessed in 2019.</li> </ul>
Most Favored Nations Clause	<ul style="list-style-type: none"> <li>Ambiguity regarding delivery method effect on pricing.</li> </ul>	<ul style="list-style-type: none"> <li>MFN considers delivery method, allowing for different pricing if delivered through a bunker barge.</li> </ul>



Includes all revenues, except for commodity

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**Presentation to the PSE Board of Directors**

**May 3, 2018**



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# Tacoma LNG Project

Board Update



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May 3, 2018

# Construction work of non-emitting portion of project continues in accordance with modified construction option

## Site preparation

- Construction began 11/1/2016
- ✓ Demolition and ground stabilization work complete

## Full-containment storage tank

- ✓ Roof raising for outer tank inner lining completed on 3/6/2018
- ✓ Form work for first concrete tank ring completed
- First pour scheduled for week of 4/16/2018

## LNG cryogenic pipeline

- Excavation of send-out pit underway

## Blair Waterway fueling pier

- ✓ Deck pour complete
- Setting of pier walkways in progress

## Materials and Fabrication

- Procurement is 88% complete; fabrication is 81% complete with items stored on site

## Gas distribution system upgrades

- ✓ Frederickson gate station and 4-mile 16" pipeline complete
- Remaining distribution work postponed until 2019

## Tacoma Power substation

- ✓ Civil work and steel erection complete, transformers set
- Control house set; wiring in progress



Form work for first concrete tank ring complete



Walkways on Blair Waterway loading platform



# PSCAA Supplemental Environmental Impact Statement (SEIS) requirement delays air permit and project completion by approximately 15 months

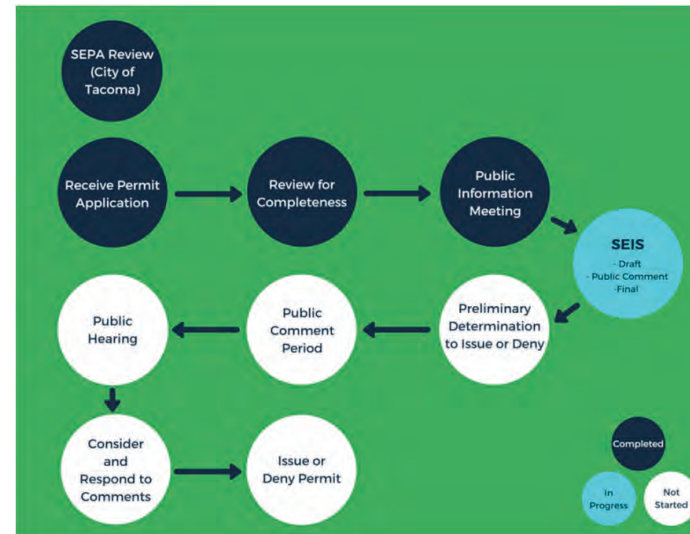
## Where we are

- PSCAA has selected Ecology & Environment, Inc. (E&E) and Life Cycle Associates (LCA) to prepare SEIS
  - We view these as positive developments based on the reputations and past work of both firms

## PSE permitting strategy

- PSE has added Dennis McLerran, former EPA Region X Administrator and former PSCAA Executive Director, to our legal team.
- PSE has retained technical experts to develop project related GHG background information for both upstream and downstream emissions, as well as the facility's estimated direct emissions.
  - This background information was submitted to PSCAA
  - PSE is having the information peer-reviewed by experts

## Permit process



- SEIS completion is now anticipated by February 1, 2019, per PSCAA SEIS schedule
- Issuance of final permit is anticipated by approximately June 1, 2019, based on PSE estimates of remaining permitting time
- PSCAA agreed to regular dialogue regarding the SEIS process, commencing as soon as the SEIS PSCAA work is initiated.



# Negotiations are underway with CBI to mitigate cost and schedule of project delay due to PSCAA air permit delay

## Where we are

- **2/22/2018** – CBI provided rough-order of magnitude estimate for PSCAA delay of \$16.5 million and 4-week schedule addition
- **3/10/2018** – CBI provided firm lump-sum price of \$13.8 million and 7-week schedule reduction, resulting in project final acceptance of 11/3/2020, assuming air permit received by 3/1/2018
  - CBI provided detailed review of pricing
  - PSE requested price reduction to \$9 million at follow-on executive level meeting
  - CBI respond with reduction to \$9.3 million
- **4/19/2018** – PSCAA schedule shows 2/1/2019 SEIS completion date adding three additional months to permit timing, which will almost certainly increase CBI delay cost

## PSE available options

- Absent successful negotiations of a change order, PSE has a range of other contractual options:
  - Use mediation provision of contract to resolve
  - Issue a directive change order to CBI
  - Suspend or terminate work

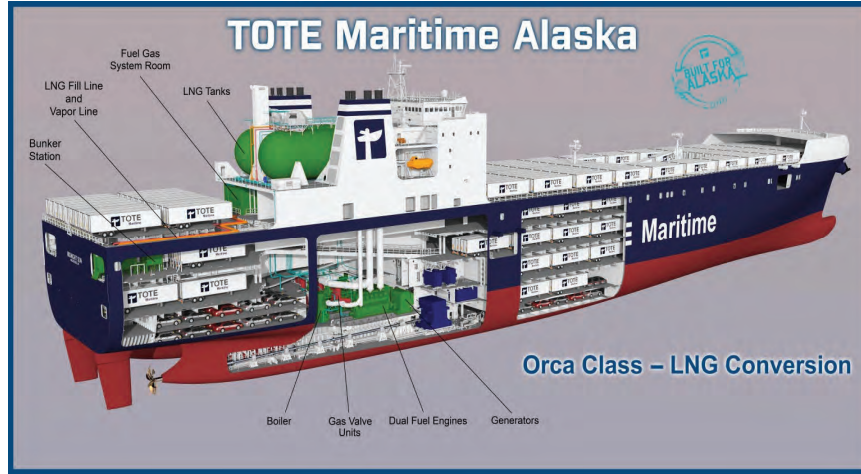
## CBI mitigation measures

### **CBI began taking mitigation measures in late January. They have:**

- Developed a revised staffing plan for on-site project team
- Suspended mobilization of new personnel and certain subcontractors related to emitting-equipment work
- Reduced project team to 40 hours/week, with exception of construction supervision
- Re-sequenced project schedule to reduce overall construction time for process area by 7 weeks, once that work commence
- Will demobilize 25 percent of existing project term currently onsite



# Tote conversion schedule has slipped



First LNG deliveries required by TOTE in Q2 2020; first full deliveries needed in Q3 2021 per TOTE's schedule.

Project Milestones	2017				2018				2019				2020				2021			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
MAN Engineering Design	■	■																		
MAN Test Engine Procurement & Preparation					■	■	■	■												
MAN Engine Testing including Class Approval									■	■	■	■								
North Star first dry-dock (LNG preparation)						■	■													
Midnight Sun first dry-dock (LNG preparation)									■	■										
North Star second dry-dock (Convert engines 1 & 2)													■	■						
North Star work under way (Convert engines 3 & 4)														■						
Midnight Sun second dry-dock (Convert engines 1 & 2)																	■	■		
Midnight Sun work under way (Convert engines 3 & 4)																			■	■

## TOTE – by the numbers

- **826,000** – gallons of LNG consumed monthly by TOTE per each two converted engines (there are four engines per vessel)
- **\$255,000** – TOTE monthly savings per each two converted engines (estimated cost of LNG purchased from PLNG with natural gas at \$2.50/MMBtu compared to MGO).
- **\$160,000** – estimated monthly LDs owned by PLNG to TOTE during period prior to facility completion (under existing fuel supply agreement, per each two converted engines).
- **3,300,000** – gallons LNG TOTE obligated to PLNG to purchase monthly once LNG facility is complete (under existing fuel supply agreement).
- **\$281,000** – TOTE monthly cost for unconsumed fuel per each two non-converted engines prior to completion of TOTE conversion program.



# Communications goal: Facilitate the timely completion of the PSCAA SEIS process and permitting process

## Strategy

**Enhance community dialogue supporting LNG to create comfort zone so PSCAA can complete timely environmental review and issue permit.**

## Tactics

**Tactics:** Use direct and indirect outreach methods and paid media to deliver research-based messaging.

- **Direct** : PSE delivers messages to opinion and community leaders, and elected officials.
- **Indirect** : Third-party stakeholders (e.g., labor, Maritime trade associations, A Place for Jobs) – delivers through comments in PSCAA process, and delivers messages to PSCAA board members, elected officials, and opinion and community leaders.

## Changes in approach

### Change in approach – Outreach

- Increase PSE visibility in community
  - Deeper reach with community and opinion leaders
  - Build and deploy coalition
- Use of indirect messengers for comments in SEIS and permit process
- Direct focus on PSCAA process
- Directly and respectfully addressing opposition claims

### Change in approach – Media

- Consistent delivery and higher volume
- Broaden market to include Pierce and South King counties
- Extend Together campaign in broader market

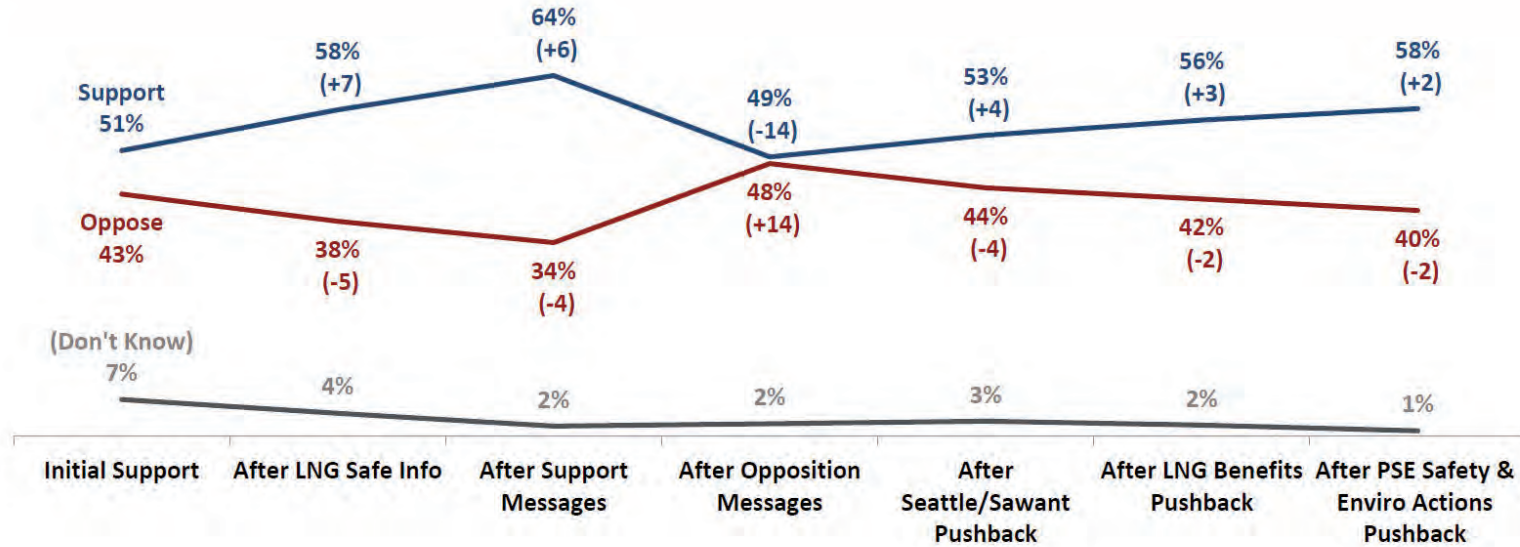


Support increases when we deliver our messages and deteriorates when we don't speak and opponents do

## Support Progression



Support for the LNG facility ranges between 49% and 64% and opposition ranges between 34% and 48%.



18-6712 PSE LNG | 32



# Opponents continue to focus on LNG

## Where we are

- Research shows that opponents have been effective and are making some impacts on PSE's brand, though opinion remains solid overall.
- Opponents have effective messages and have eroded support for PSE with little investment on their end.
- Puyallup Tribe is now fully engaged
  - Financial backing
  - High favorable rating, 74 percent
- Pyramid Communications hired by tribe
  - Successful campaign to limit oil and gas leases in the Badger-Two Medicine area in Montana

## PSE strategy and tactics

- PSE planning for heightened activities through summer. Activities include extension of Together campaign and scenario response.





*Page contains attorney-client privileged information  
that has been removed.*

Exh. RJR-8C  
Page 88 of 165

REDACTED VERSION

# Appendix

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- Project permitting status

# LNG project permitting status

*Other than air permit, risk of revocation of other permits is minimal given work already completed*

## Environmental Review, Permit and Approval Status – April 5, 2018

- We've completed all land use permitting requirements
- Remaining permits are primarily building or right-of-way permits, which will be issued as long as the permit submittal meets code requirements
- PSCAA air permit process delayed by agency decision to prepare a Supplemental EIS.

REVIEW/PERMIT/APPROVAL	AGENCY	PERMIT STATUS	WORK STATUS
Franchise agreements--pipeline	Fife	Current	Complete
Franchise agreements--pipeline	Pierce Co	Current	Complete
Franchise agreements--pipeline	Tacoma	Current	Complete
SEPA	Tacoma	Complete	Complete
Shoreline Permit	Tacoma	Complete <sup>1</sup>	Ongoing
Right of Way Agreements (street use)	Tacoma	Complete	Complete
Special Discharge Authorization--plant	Tacoma	Complete	Ongoing
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Coastal Zone Management Act consistency determination	Ecology	Complete <sup>2</sup>	Complete
NPDES Stormwater Construction Permit--plant	Ecology	Complete	Ongoing
NPDES Stormwater Construction Permit--pipeline	Ecology	Complete	Ongoing
Individual 404/Sec 10	USACE	Complete	Complete
Marine Mammal Monitoring Plan	USACE	Complete	Complete
Letter of Recommendation	USCG	Complete	Complete
Numerous building permits--plant, currently 45 total, 43 submitted, 38 received	Tacoma	In-process <sup>3</sup>	Ongoing
Right of Way Agreements (street use)	Pierce Co	In process <sup>4</sup>	Ongoing
Building permits--pipeline	Pierce Co	In-process <sup>5</sup>	Ongoing
WA State Highway crossing permit	WSDOT	In-process <sup>6</sup>	Ongoing
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Continuous Oversight of Plant Design, Construction and Operations	WUTC/PHMSA	On-going	Ongoing

<sup>1</sup> Under appeal <sup>2</sup> Appeal dismissed at PCHB and appealed to State Superior Court <sup>3</sup> Statistics include building, demolition, site development, wastewater, mechanical and plumbing permits <sup>4</sup> For Golden Givens 1-mile section <sup>5</sup> Complete for Frederickson Gate Station; in progress for Golden Givens limit station <sup>6</sup> Complete for 4-mile; in progress for Golden Givens 1-mile section

**Presentation to the PSE Board of Directors**  
**June 21, 2018**

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# Tacoma LNG Project

Board Update



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June 21, 2018

# Construction work of non-emitting portion of project continues in accordance with modified construction option

## Site preparation

- ✓ Construction began 11/1/2016
- ✓ Demolition and ground stabilization work complete

## Full-containment storage tank

- ✓ Roof raising for outer tank inner lining completed on 3/6/2018
- ✓ Completed pours of 3 out of 8 outer tank rings
  - Construction of inner tank in progress

## LNG cryogenic pipeline

- ✓ Entry and exit pits complete
  - Tunnel boring machine being assembled on site

## Blair Waterway fueling pier

- ✓ Loading platform complete

## Materials and Fabrication

- Procurement is 91% complete; fabrication is 94% complete with items stored on site

## Gas distribution system upgrades

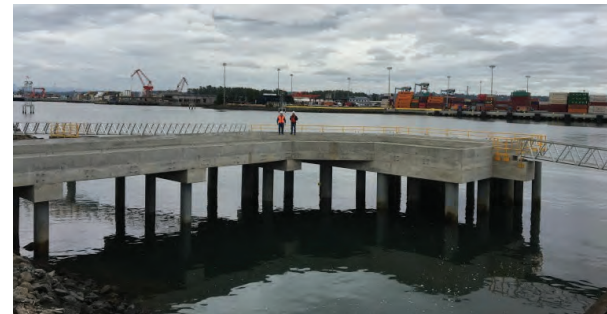
- ✓ Frederickson gate station and 4-mile 16" pipeline complete
  - Remaining distribution work postponed until 2019

## Tacoma Power substation

- ✓ Substation is substantially complete
  - Awaiting transmission line tie-in this month



*Three of eight concrete tank ring completes*



*Blair Waterway loading platform*



# PSCAA is making progress on the SEIS; Washington Court of Appeals affirms project's Shoreline Permit

## PSCAA Air Permit

- **May 25, 2018** – PSE responded to an information request from PSCAA for inputs related to the GHG lifecycle analysis.
- **June 1, 2018** – First PSE-PSCAA SEIS status check-in meeting
  - PSCAA reported being on schedule with their SEIS process

## Shoreline Permit

- **May 14, 2018** – The Washington State Court of Appeals upheld the 2016 decision of the Shorelines Hearings Board
  - Confirmed the sufficiency of substantive and procedural review conducted by the City of Tacoma for the LNG project's shoreline substantial development permit, including the adequacy of mitigation to ensure no net loss of shoreline ecological function



# Negotiations finalized with CBI to mitigate cost and schedule of project delay due to PSCAA air permit delay

## Background

- **February 22, 2018** – CBI provided rough-order of magnitude estimate for PSCAA delay of \$16.5 million and 4-week schedule addition
- **March 10, 2018** – CBI provided firm lump-sum price of \$13.8 million and 7-week schedule reduction, resulting in project final acceptance of 11/3/2020, assuming air permit received by 3/1/2018
  - CBI provided detailed review of pricing
  - PSE requested price reduction to \$9 million at follow-on executive level meeting
  - CBI respond with reduction to \$9.3 million by eliminating escalation (to be handled in future change order) and removing warranties
- **April 19, 2018** – PSCAA schedule shows 2/1/2019 SEIS completion date adding three additional months to permit timing.
- **May 11, 2018** – CBI provided updated firm lump-sum price of \$10.8 million
  - Updated pricing included \$206K for extension of select equipment warranties

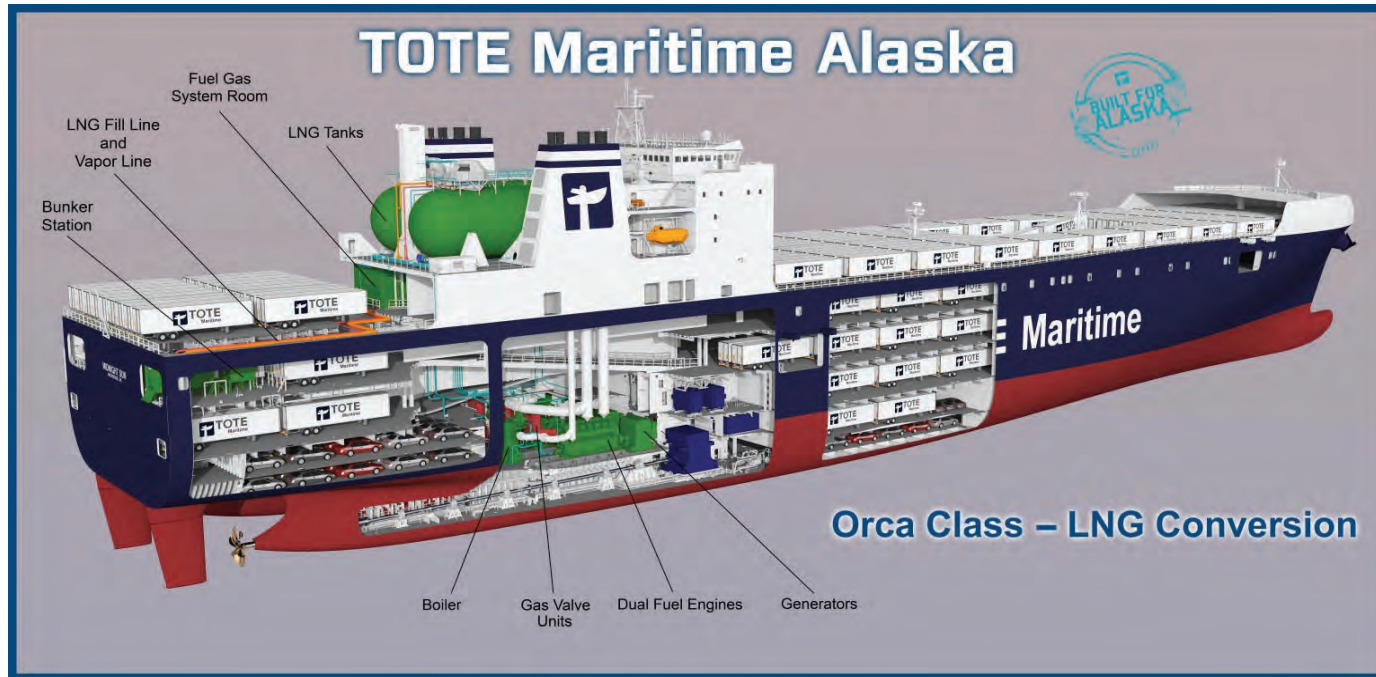
## Resolution

- **June 1, 2018** – PSE and CBI agree upon pricing and remaining commercial terms associated with PSCAA air permit delay change order
- Pricing and PSE allowances as follows:
  - \$10,837,951 CBI firm pricing for delay
  - ~\$2,000,000 PSE allowance for escalation
  - ~\$100,000 PSE allowance for additional warranty exposure





# Tote conversion schedule has slipped an additional year



- First LNG deliveries required by TOTE in Q2 2021
- First full deliveries needed in Q3 2022 per TOTE's current schedule



PRIVILEGED AND CONFIDENTIAL – PREPARED AT DIRECTION OF COUNSEL

## Communications goal remains to facilitate the timely completion of the PSCAA SEIS process and permitting process

### Strategy

**Enhance community dialogue supporting LNG to create comfort zone so PSCAA can complete timely environmental review and issue permit.**

### Tactics

**Tactics:** Use direct and indirect outreach methods and paid media to deliver research-based messaging.

- **Direct** : PSE delivers messages to opinion and community leaders, and elected officials.
- **Indirect** : Third-party stakeholders (e.g., labor, Maritime trade associations, A Place for Jobs) – delivers through comments in PSCAA process, and delivers messages to PSCAA board members, elected officials, and opinion and community leaders.

### Current efforts

#### Change in approach – Outreach

- Outreach to Port of Tacoma Commissioners (jointly with TOTE) and Congressional delegation in addition to continued conversations with local elected officials and key stakeholders
- Requested meeting with Puyallup Tribal Council members
- Working jointly with TOTE on communications and outreach
- Supporting the creation of a Manufacturing Industrial Council (MIC) focused on port business

#### Change in approach – Media

- Refreshing advertising creative and broadening marketing to include Pierce and South King counties
- Extending TOGETHER campaign in broader market



# Total project budget increase of \$56M relative to November 2017 revised budget

	(A)	(B)	(C) (A - B)	(D)	(E) (B-D)	(F)	(G) (D-F)
	Board Approved Budget	November 2017 Revised Budget	Variance	March 2018 Indicative Budget	Variance	June 2018 Indicative Budget (15-mo. Delay)	Variance
1 Tacoma LNG Capital Budget (\$ millions)							
2 Development	\$20	\$22	(\$2)	\$22	\$0	\$22	\$0
3 CBI EPC	197	214	(17)	217	(3)	228	(11)
4 Miscellaneous Construction	55	58	(2)	57	0	58	(1)
5 PM & Outside Services	16	22	(5)	29	(8)	32	(2)
6 Insurance	2	1	1	1	0	1	(0)
7 Sales Tax	14	15	(1)	15.38	(0)	16	(0)
8 Contingency	19	8	11	8	0	7	1
9 Construction OH's	10	17	(7)	17	(0)	21	(3)
10 <b>LNG FACILITY TOTAL</b>	<b>\$332</b>	<b>\$356</b>	<b>(\$23)</b>	<b>\$366</b>	<b>(\$11)</b>	<b>\$384</b>	<b>(\$17)</b>
11 Gas System Upgrades	\$31	\$31	\$0	\$31	(\$0)	\$35	(\$4)
12 Contingency	4	4	0	4	0	2	\$2
13 Permitting Mitigations	4	4	0	4	0	4	\$0
14 <b>GAS SYSTEM IMPROVEMENTS TOTAL</b>	<b>\$39</b>	<b>\$39</b>	<b>\$0</b>	<b>\$39</b>	<b>(\$0)</b>	<b>\$40</b>	<b>(\$1)</b>
15 <b>PROJECT CAPITAL TOTAL</b>	<b>\$371</b>	<b>\$395</b>	<b>(\$23)</b>	<b>\$405</b>	<b>(\$11)</b>	<b>\$424</b>	<b>(\$19)</b>
16 AFUDC / IDC	\$51	\$57	(\$6)	\$78	(\$21)	\$83	(\$5)
17 <b>CLOSING GROSS PLANT</b>	<b>\$422</b>	<b>\$451</b>	<b>(\$29)</b>	<b>\$483</b>	<b>(\$32)</b>	<b>\$507</b>	<b>(\$24)</b>

## Additional project budget request includes PSCAA delay costs and additional contingency

	(A)	(B)
<b>Tacoma LNG Additional Budget Request</b>		
<i>(\$ thousands)</i>		
<b>1 Current Contingency Deficit</b>		<b>\$17,633</b>
<b>2 Contingency on Cost to Finish</b>		
3 CBI EPC (@ 4%)	\$4,364	
4 CBI LNG pipeline (@ 25%)	2,226	
5 Other construction (@ 10%)	<u>660</u>	<b>7,251</b>
<b>6 Project Construction OH (5% to 7%)</b>		<b>3,311</b>
<b>7 Subtotal</b>		<b><u>\$28,195</u></b>
<b>8 Distribution</b>		<b>1,544</b>
<b>9 AFUDC/IDC increase</b>		<b>26,255</b>
<b>10 TOTAL</b>		<b><u>\$55,994</u></b>

## Project contingency has been used to cover various project changes and needs to be replenished

		(A)
<b>Contingency analysis</b>		(\$ thousands)
1	Original project contingency	\$19,252
2	Contingency increase (Nov-17)	<u>14,745</u>
<b>3</b>	<b>Total Contingency</b>	<b>\$33,997</b>
4	Committed contingency	
5	CBI fuel quality	(5,432)
6	CBI air permit delay (to Feb. 2018)	(7,689)
7	CBI air permit delay (to Jun. 2019)	(12,992)
8	CBI flare and vaporizer changes (ROM estimate)	(2,880)
9	CBI escalation for delay	(2,027)
10	CBI permitting support	(1,112)
11	CBI LNG cryogenic pipeline (ROM estimate)	(4,012)
12	CBI miscellaneous	(1,434)
13	Legal costs for tribal appeals	(4,462)
14	Development phase overrun	(2,201)
15	Project management	(2,743)
16	Other miscellaneous	(7,773)
17	Project savings	3,129
<b>18</b>	<b>Remaining contingency</b>	<b>(\$17,633)</b>

# Appendix

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- Project permitting status

# LNG project permitting status

## Environmental Review, Permit and Approval Status – June 1, 2018

- We've completed all land use permitting requirements
- Remaining permits are primarily building or right-of-way permits, which will be issued as long as the permit submittal meets code requirements
- PSCAA air permit process delayed by agency decision to prepare a Supplemental EIS

REVIEW/PERMIT/APPROVAL	AGENCY	PERMIT STATUS	WORK STATUS
work	Fife	Current	Complete
Franchise agreements--pipeline	Pierce Co	Current	Complete
Franchise agreements--pipeline	Tacoma	Current	Complete
SEPA	Tacoma	Complete	Ongoing
Shoreline Permit	Tacoma	Complete <sup>1</sup>	Ongoing
Right of Way Agreements (street use)	Tacoma	Complete	Complete
Special Discharge Authorization--plant	Tacoma	Complete	Ongoing
Rail crossing permit	Tac Rail	Complete	Complete
Right of Way Agreements (street use)	Fife	Complete	Complete
LNG Pipeline Waiver	WUTC/PHMSA	Complete	Complete
Hydraulic Project Approval-plant	WDFW	Complete	Complete
Hydraulic Project Approval-pipeline	WDFW	Complete	Complete
Individual 401 Certification	Ecology	Complete <sup>2</sup>	Complete
Coastal Zone Management Act consistency determination	Ecology	Complete <sup>2</sup>	Complete
NPDES Stormwater Construction Permit--plant	Ecology	Complete	Ongoing
NPDES Stormwater Construction Permit--pipeline	Ecology	Complete	Ongoing
Individual 404/Sec 10	USACE	Complete	Complete
Marine Mammal Monitoring Plan	USACE	Complete	Complete
Letter of Recommendation	USCG	Complete	Complete
Numerous building permits--plant, currently 53 total, 42 submitted, 49 received	Tacoma	In-process <sup>3</sup>	Ongoing
Right of Way Agreements (street use)	Pierce Co	In process <sup>4</sup>	Ongoing
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Minor New Source Notice of Construction	PSCAA	In-process	Pending
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**Presentation to the PSE Board of Directors**

**August 2, 2018**



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# Tacoma LNG Project

Board Update



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August 2, 2018

PSE has reduced visible construction activities at the LNG site during the Tribal Canoe Journey (7/28-8/4) This year's journey is being hosted by the Puyallup Tribe.

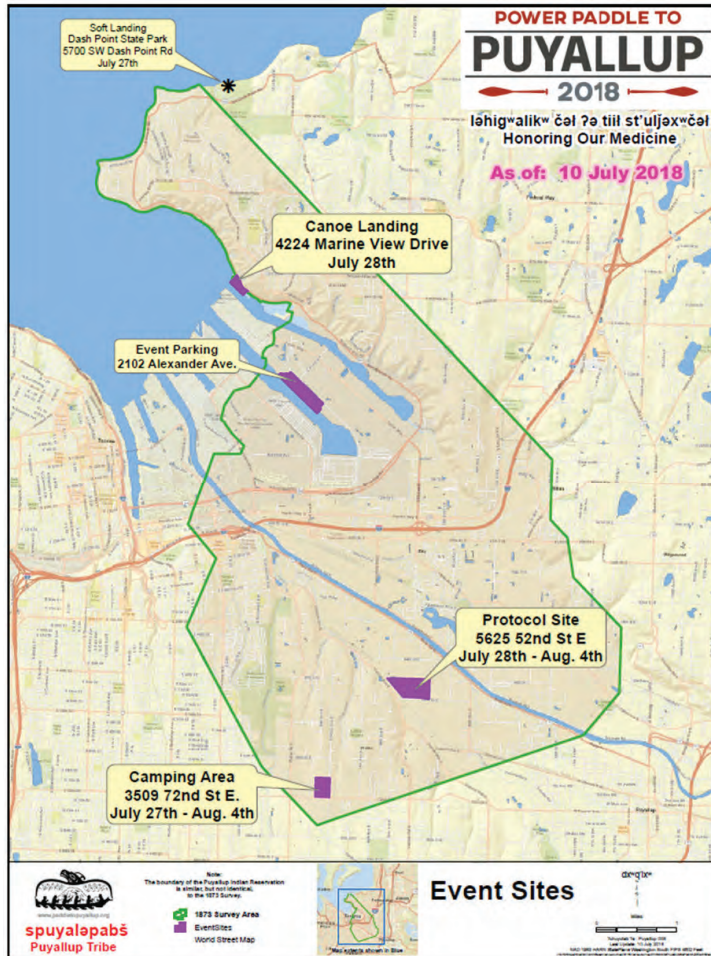


Photo: Tacoma News Tribune, July 28, 2018



# Tacoma Fire Department safety study finds Tacoma LNG designed to latest codes



## Report conclusions:

- “Tacoma LNG was designed to the applicable codes and standards with significant attention to detail and a perceived objective of becoming a best in class LNG facility.”
  - Some features “go beyond code compliance to provide additional layers of protection.”
- The full containment tank for the Tacoma facility has a “robust design suited for the local conditions,” which includes design features of a safe shutdown in case of an earthquake without loss of containment.
  - No credible failure scenarios for the full containment LNG storage tank.
  - Nevertheless, the tank’s multi-layered design ensures that in the unlikely event the primary containment system has an accidental LNG release the LNG will be completely contained by secondary containment systems.



# LNG storage tank work continues in accordance with modified construction option

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*Completed pour of outer tank ring #7 (out of 8)*



*Installation of inner tank ring #8 (out of 10)*



The substation and fuel loading piers are complete.  
Boring for the LNG pipeline expected to be complete in early August.



*Completed fueling pier*

*Installation of LNG pipeline casings*



*Completed Tacoma Power substation*



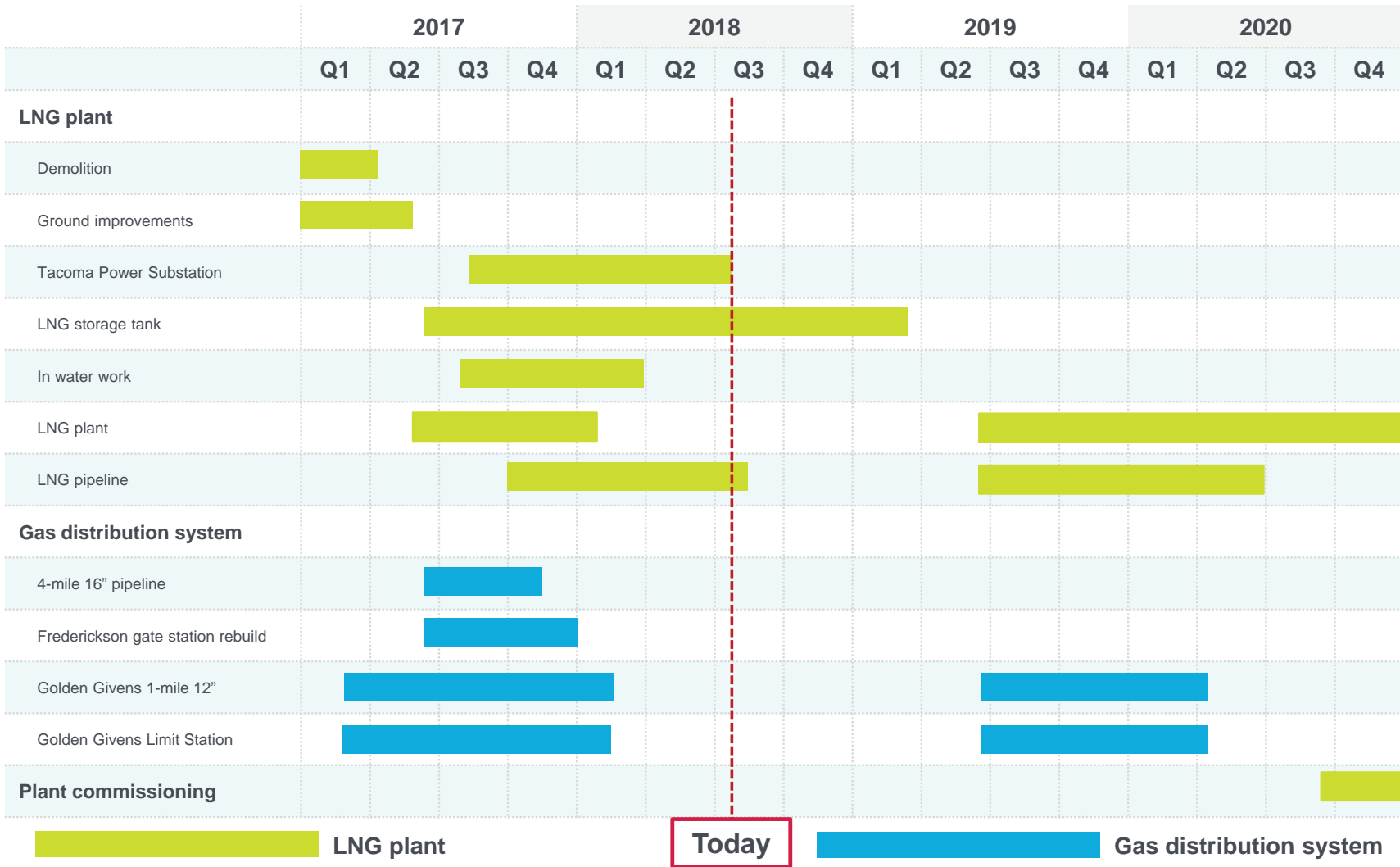
# Appendix

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- Project schedule

# Project scheduled to be in-service in late 2020

*In-service date delayed by air permit timing*



**Presentation to the PSE Board of Directors**  
**September 20, 2018**



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# Tacoma LNG Project

Board Update



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September 20, 2018

# Construction work of non-emitting portion of project continues in accordance with modified construction option

## Site preparation

- ✓ Construction began 11/1/2016
- ✓ Demolition and ground stabilization work complete

## Full-containment storage tank

- ✓ Completed concrete pours for all 8 outer tank rings; roof pours will occur in September
- ✓ Completed 9 of 10 inner tank rings; #10 in progress

## LNG cryogenic pipeline

- ✓ Tunnel boring complete

## Blair Waterway fueling pier

- ✓ Loading platform complete

## Materials and Fabrication

- ✓ Procurement is 93% complete; fabrication is 98% complete with items stored on site

## Gas distribution system upgrades

- ✓ Frederickson gate station and 4-mile 16" pipeline complete
- ✓ Remaining distribution work postponed until 2019

## Tacoma Power substation

- ✓ Substation is complete and energized

## Look Ahead

- ✓ Lull in construction activity anticipated between February and until June 2019 (anticipated receipt of PSCAA air permit)



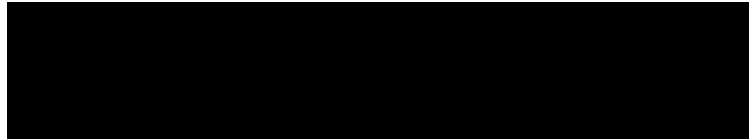
## LNG tank painting

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- Painting LNG tank will send message that tank is complete as well as create a better visual image for the local community
- Implementation plan is being developed
  - Evaluating permitting impacts
  - Evaluation construction sequence and timeline impacts
  - Developing specifications and preparing bid package
- Targeting spring 2019 for painting
  - Weather, contractor availability, and construction sequence may impact when painting can occur
- Rough order of magnitude pricing is \$1.2 million with little or no impact to completion schedule

# White River surplus property – Evaluation / Opportunity

## Background:

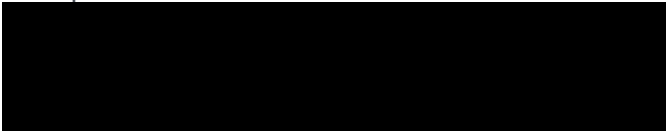


- 2,000 acres of contiguous parcels
- Used to support the White River Hydroelectric Project
- Puyallup and Muckleshoot tribes have made public claims regarding the property – historical cultural claims

## Next Steps:

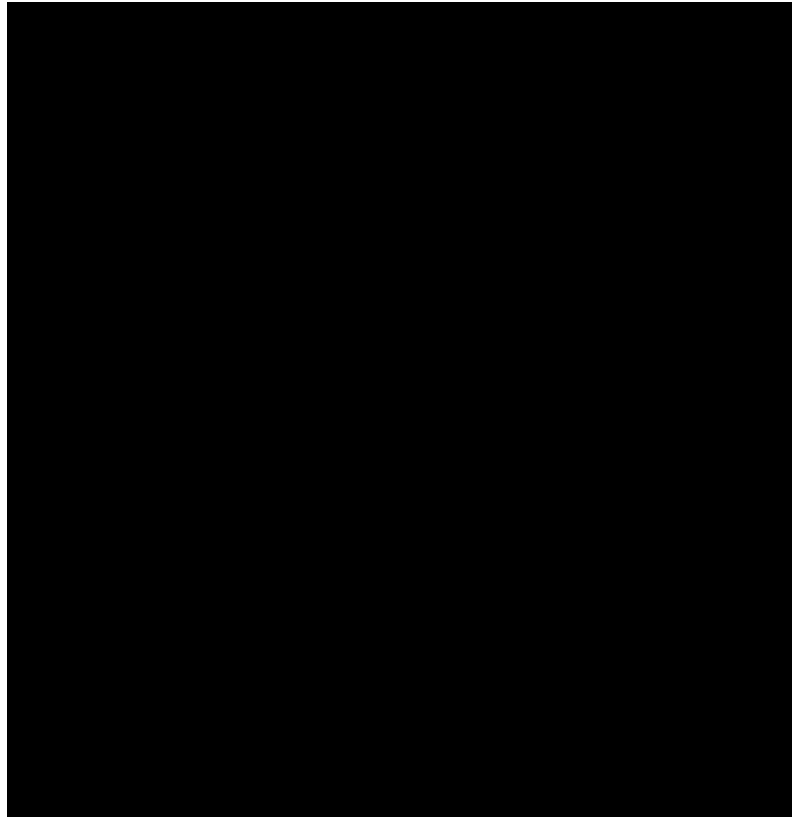
Timing of PSCAA review and tribal outreach:

1. Letter drafted to invite tribes to participate in early consultation
  - Letter is drafted – likely send in mid-September.
2. Completed environmental benefit review



**SHADED INFORMATION IS  
DESIGNATED AS CONFIDENTIAL PER  
WAC 480-07-160**

## Recommendations:



# Appendix

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- Project permitting status

# LNG project permitting status

## Environmental Review, Permit and Approval Status – September 3, 2018

- We've completed all land use permitting requirements
- Remaining permits are right-of-way permits and the limit station building permit, which will be issued as long as the permit submittal meets code requirements
- PSCAA air permit process delayed by agency decision to prepare a Supplemental EIS.

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LNG Pipeline Waiver	WUTC/PHMSA	Complete	Complete
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**Presentation to the PSE Board of Directors**  
**November 1, 2018**

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# Tacoma LNG Project

Board Update



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November 1, 2018



# Construction work of non-emitting portion of project continues in accordance with modified construction option

## Site preparation

- ✓ Construction began 11/1/2016
- ✓ Demolition and ground stabilization work complete

## Full-containment storage tank

- ✓ Completed concrete pours for all outer tank rings and roof
- ✓ Completed all inner tank rings
- ✓ Exterior egress ladder and stairs are complete
- Installing final inner tank floor and misc. interior items
- Tensioning post-tension tendons is in progress

## LNG cryogenic pipeline

- ✓ Tunnel boring complete

## Blair Waterway fueling pier

- ✓ Loading platform complete

## Materials and Fabrication

- Procurement is 93.8% complete; fabrication is 99.7% complete with items stored on site

## Gas distribution system upgrades

- ✓ Frederickson gate station and 4-mile 16" pipeline complete
- Remaining distribution work postponed until 2019

## Tacoma Power substation

- ✓ Substation is complete and energized

## Look Ahead

- Lull in construction activity anticipated between February until June 2019 (anticipated receipt of PSCAA air permit)



# PSCAA Draft Supplemental Environmental Impact Statement (SEIS) concludes that LNG project will reduce greenhouse gases

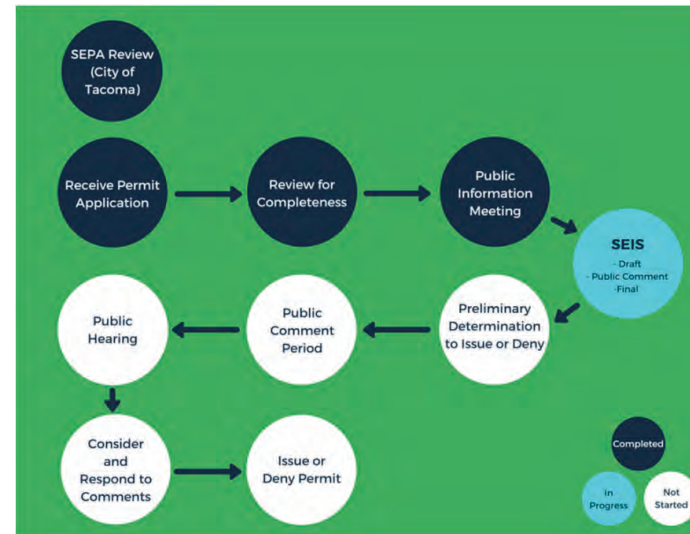
## Where we are

- Draft SEIS concludes that LNG project will reduce greenhouse gas emissions
  - Recommends a condition that gas be sourced from British Columbia, which we can meet, if imposed, but will need to work out how compliance is measured
- PSCAA/PSE dialogue likely to be limited during public comment period and agency response to comments

## PSE permitting strategy

- PSE will support the draft SEIS conclusions in its comments and will point out some analytical areas which would further increase the reduction amount
- PSE's comments will support PSCAA's 100-year evaluation methodology and provide supporting arguments for why a 20-year evaluation is not appropriate
- PSE has identified and is developing support from a diverse group of stakeholders to provide comments in support of the draft SEIS

## PSCAA permit process



- **October 8, 2018** – Draft SEIS published and opening of public comment period
- **October 30, 2018** – Public hearing in Tacoma
- **November 21, 2018** – Anticipated closing date of public comment period
- **February 1, 2019** – Anticipated publish date of final SEIS
- **June 1, 2019\*** – Anticipated date of final air permit

\* - Based on PSE estimates; all other dates based on PSCAA schedule



# Communications goal remains to facilitate the timely completion of the PSCAA SEIS process and air permit process

## Strategy

**Enhance community dialogue supporting LNG to create comfort zone so PSCAA can complete timely environmental review and issue permit.**

## Tactics

**Tactics:** Use direct and indirect outreach methods and paid media to deliver research-based messaging.

- **Direct :** PSE delivers messages to opinion and community leaders, and elected officials.
- **Indirect :** Third-party stakeholders (e.g., labor, Maritime trade associations, A Place for Jobs) – delivers through comments in PSCAA process, and delivers messages to PSCAA board members, elected officials, and opinion and community leaders.

## Current efforts

### Outreach and media

- Efforts are focused on the SEIS public comment period and public hearing on October 30.



PSE is making postcards available during the public comment period.

My name: \_\_\_\_\_  
My address 1: \_\_\_\_\_  
My address 2: \_\_\_\_\_  
My city, State, Zip: \_\_\_\_\_

Puget Sound Clean Air Agency, please approve the LNG facility in Tacoma because:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

This statement written in support of Puget Sound Energy's Tacoma LNG facility, during PSCAA's draft SEIS comment period.



Puget Sound Clean Air Agency  
1904 3rd Ave # 105,  
Seattle, WA 98101

0000 0916

# White River Surplus Property – Evaluation / Opportunity

## Background

[Redacted]

- 2,000 acres of contiguous parcels
- Used to support the White River Hydroelectric Project
- Puyallup and Muckleshoot tribes have made public claims regarding the property – historical cultural claims

## Next Steps

Timing of PSCAA review and tribal outreach:

1. Letters sent inviting tribes to participate in early consultation – Waiting for response
  - Letters were sent in late September. Muckleshoots have responded and a meeting is scheduled. Its been confirmed that the Puyallups are reviewing our request to meet. It will likely take a little time to get a response.
2. Completed environmental benefit review –

[Redacted]

## Recommendations

[Redacted]

REDACTED VERSION

**SHADED INFORMATION IS  
DESIGNATED AS CONFIDENTIAL PER  
WAC 480-07-160**



# Appendix

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- Project permitting status
- Project construction schedule



# LNG project permitting status

## Environmental Review, Permit and Approval Status – October 9, 2018

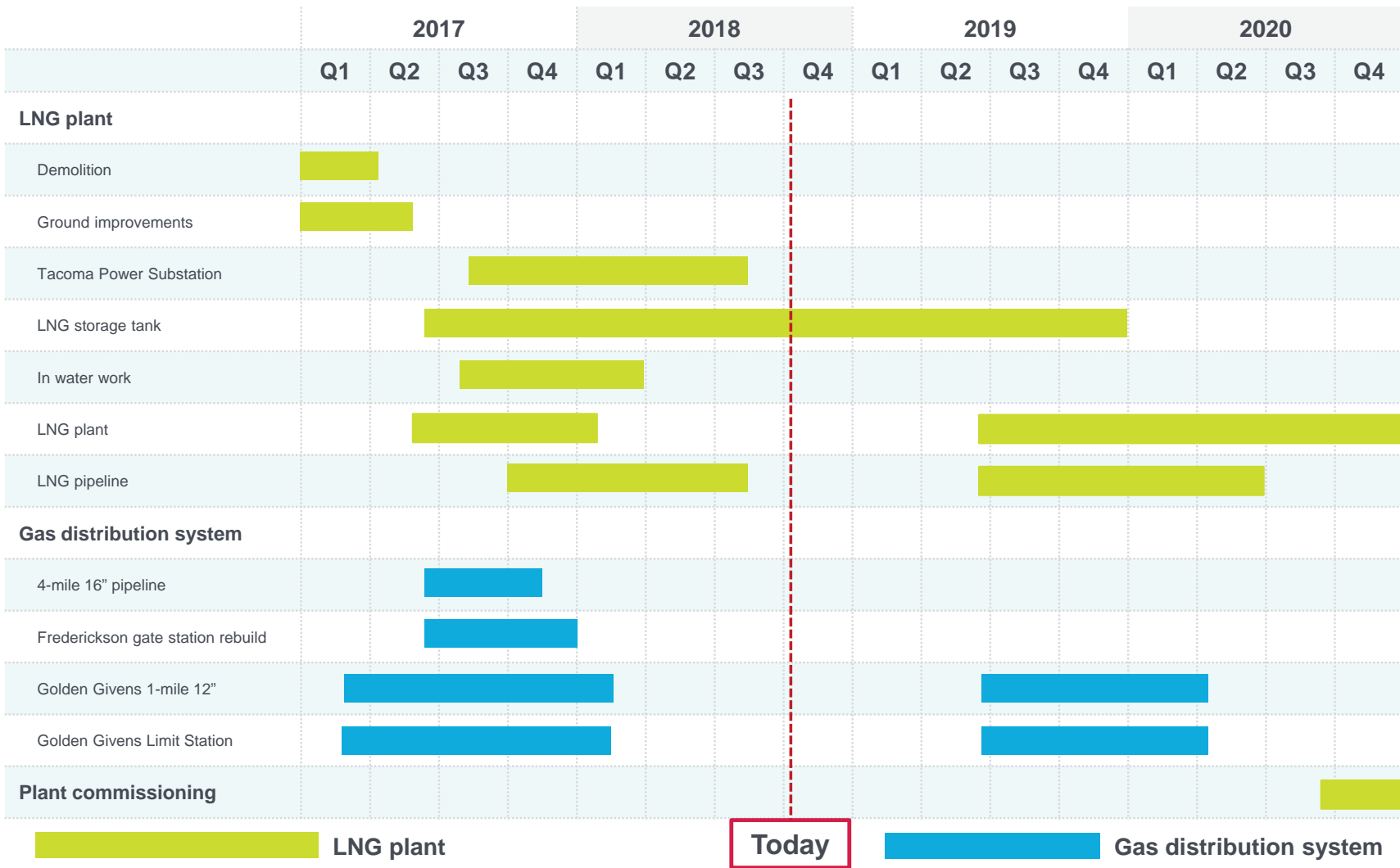
- We've completed all land use permitting requirements
- Remaining permits are right-of-way permits and the limit station building permit, which will be issued as long as the permit submittal meets code requirements
- PSCAA air permit process delayed by agency decision to prepare a Supplemental EIS

REVIEW/PERMIT/APPROVAL	AGENCY	PERMIT STATUS	WORK STATUS
Franchise agreements--pipeline	Fife	Current	Complete
Franchise agreements--pipeline	Pierce Co	Current	Complete
Franchise agreements--pipeline	Tacoma	Current	Complete
SEPA	Tacoma	Complete	Ongoing
Shoreline Permit	Tacoma	Complete	Ongoing
Right of Way Agreements (street use)	Tacoma	Complete	Complete
Special Discharge Authorization--plant	Tacoma	Complete	Ongoing
Rail crossing permit	Tac Rail	Complete	Complete
Right of Way Agreements (street use)	Fife	Complete	Complete
LNG Pipeline Waiver	WUTC/PHMSA	Complete	Complete
Hydraulic Project Approval-plant	WDFW	Complete	Complete
Hydraulic Project Approval-pipeline	WDFW	Complete	Complete
Individual 401 Certification	Ecology	Complete <sup>1</sup>	Complete
Coastal Zone Management Act consistency determination	Ecology	Complete <sup>1</sup>	Complete
NPDES Stormwater Construction Permit--plant	Ecology	Complete	Ongoing
NPDES Stormwater Construction Permit--pipeline	Ecology	Complete	Ongoing
Individual 404/Sec 10	USACE	Complete	Complete
Marine Mammal Monitoring Plan	USACE	Complete	Complete
Letter of Recommendation	USCG	Complete	Complete
Numerous building permits--plant, currently 54 total, 54 submitted, 54 received	Tacoma	Complete <sup>2</sup>	Ongoing
Right of Way Agreements (street use)	Pierce Co	In process <sup>3</sup>	Ongoing
Building permits--pipeline	Pierce Co	In-process <sup>4</sup>	Ongoing
WA State Highway crossing permit	WSDOT	In-process <sup>5</sup>	Ongoing
Minor New Source Notice of Construction	PSCAA	In-process	Pending
Continuous Oversight of Plant Design, Construction and Operations	WUTC/PHMSA	On-going	Ongoing

<sup>1</sup> Appeal dismissed at PCHB and heard at State Superior Court; decision pending; <sup>2</sup> Statistics include building, demolition, site development, wastewater, mechanical and plumbing permits <sup>3</sup> For Golden Givens 1-mile section <sup>4</sup> Complete for Frederickson Gate Station; in progress for Golden Givens limit station <sup>5</sup> Complete for 4-mile; in progress for Golden Givens 1-mile section

# Project scheduled to be in-service in 2020

*In-service date delayed by air permit timing*



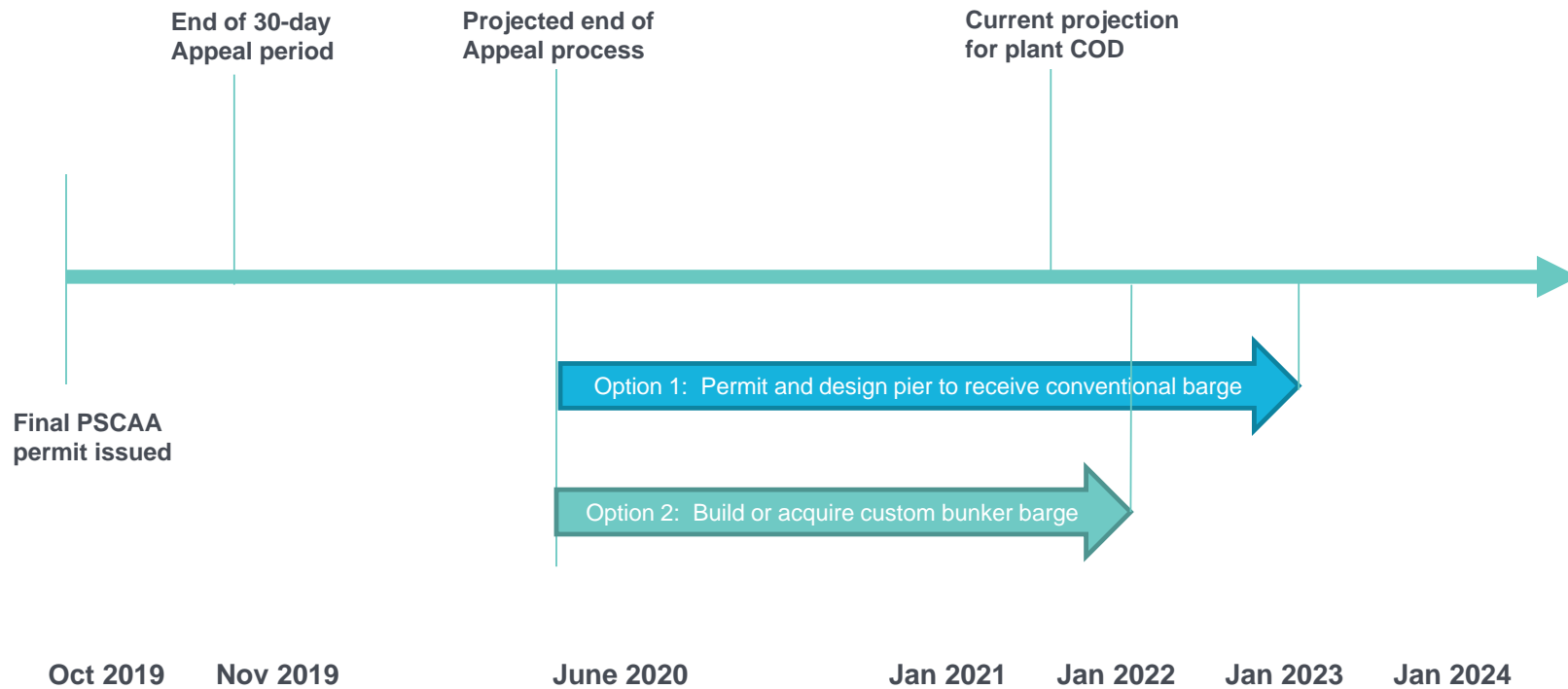
# Assumptions for both the regulated and non-regulated components of LNG have been updated

Line	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	
							<u>2020 Plan</u>	<u>2019 Plan</u>	<u>Delta 2019-</u>	
							<u>2019-2023</u>	<u>2019-2023</u>	<u>2023</u>	
	(\$ in millions)									
	<b>Total Capital Expenditures (excluding AFUDC)</b>									
1	PSE	\$26	\$30	\$5	\$2	2	\$64	\$67	(\$3)	
2	PE	32	26	8	2	1	69	36	33	
3	<b>Total Capex</b>	<b>\$58</b>	<b>\$56</b>	<b>\$13</b>	<b>\$4</b>	<b>3</b>	<b>\$132</b>	<b>\$103</b>	<b>\$30</b>	
	<b>Income Statement Impacts</b>									
4	PSE Revenue	-	-	38	\$42	\$41	\$41	\$120	\$113	\$7
5	PE Revenue	-	-	21	41	44	62	107	201	(94)
6	PSE Operating Expenses	-	(1)	(9)	(12)	(11)	(11)	(32)	(38)	6
7	PE Operating Expenses	-	(1)	(18)	(26)	(28)	(35)	(74)	(102)	28
8	<b>EBITDA</b>	<b>-</b>	<b>(1)</b>	<b>32</b>	<b>\$45</b>	<b>\$45</b>	<b>\$56</b>	<b>\$121</b>	<b>\$175</b>	<b>(\$53)</b>
9	PSE Interest Expense	(\$4)	(\$5)	(\$9)	(\$7)	(\$7)	(\$7)	(\$32)	(\$31)	(\$1)
10	PE Interest Expense	(11)	(14)	(11)	(8)	(8)	(8)	(52)	(28)	(24)
11	PSE Depreciation & Amortization	-	-	(7)	(10)	(10)	(10)	(27)	(24)	(2)
12	PE Depreciation & Amortization	-	-	(11)	(12)	(10)	(10)	(33)	(29)	(3)
13	PSE Income Tax	0	0	(2)	(3)	(3)	(3)	(8)	(4)	(4)
14	PE Income Tax	0	0	(2)	(4)	(4)	(4)	(9)	(9)	(1)
15	<b>Net Income (excl. AFUDC &amp; Capitalized Interest)</b>	<b>(\$15)</b>	<b>(\$20)</b>	<b>(\$10)</b>	<b>\$2</b>	<b>\$4</b>	<b>\$15</b>	<b>(\$39)</b>	<b>\$48</b>	<b>(\$87)</b>
16	PSE AFUDC	\$11	\$15	\$6	\$0	0	0	\$32	\$27	\$5
17	PE Capitalized Interest	11	14	3	-	-	-	28	17	11
18	<b>Net Income (incl. AFUDC)</b>	<b>\$7</b>	<b>\$9</b>	<b>(\$2)</b>	<b>\$2</b>	<b>\$4</b>	<b>\$15</b>	<b>\$21</b>	<b>\$92</b>	<b>(\$71)</b>

- TOTE North Star ready to receive LNG – March 2021
- Plant fully commissioned – July 2021
- Open capacity – assumes “option 1” – adapt pier for conventional barge by January 2023



# Timeline of options being considered to fully market PLNG unsubscribed capacity



**Presentation to the PSE Board of Directors**  
**September 19, 2019**

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# LNG Update



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September 19, 2019

Work is nearly complete on non-emitting elements of the project



# PSCCA permit anticipated in early October 2019

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## **PSCCA Air Permit**

- Draft permit received July 22, 2019
- Public comment period – July 22 through September 9, 2019
- Public hearing held August 27, 2019
- Anticipate final permit issue in early October 2019

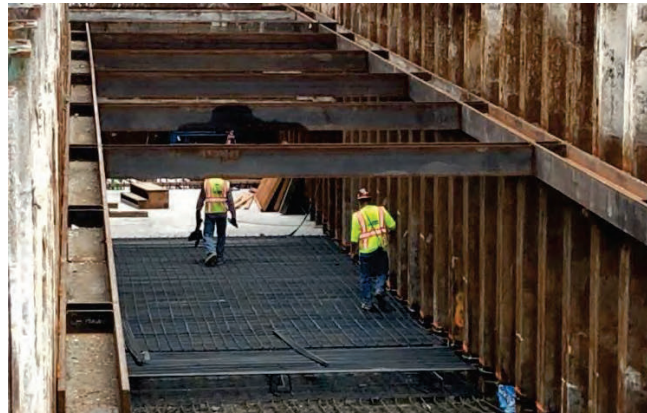
## **Post Permit**

- TOTE North Star ready to receive LNG – March 2021
- Plant mechanically complete – May 2021
- Plant fully commissioned – July 2021



# Current on-site activities are targeted to reduce time to complete overall construction

- Construction of non-emitting equipment continues after review of PSCAA draft permit language.
- Foundations and concrete work, as well as equipment setting is ongoing.
- Work is ramping up on operations preparation in anticipation of plant start-up.



## We are currently addressing a few commercial and operational risks and opportunities

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- Impact of PSCAA delay on completion date per TOTE fuel supply agreement
- Market pricing, as natural gas prices have declined slightly
- Execution of operating contract (NAES + PSE)
- Timing of our ability to sell LNG into the maritime market
  - Bunker barge configuration
  - Dolphin + shoreline permitting



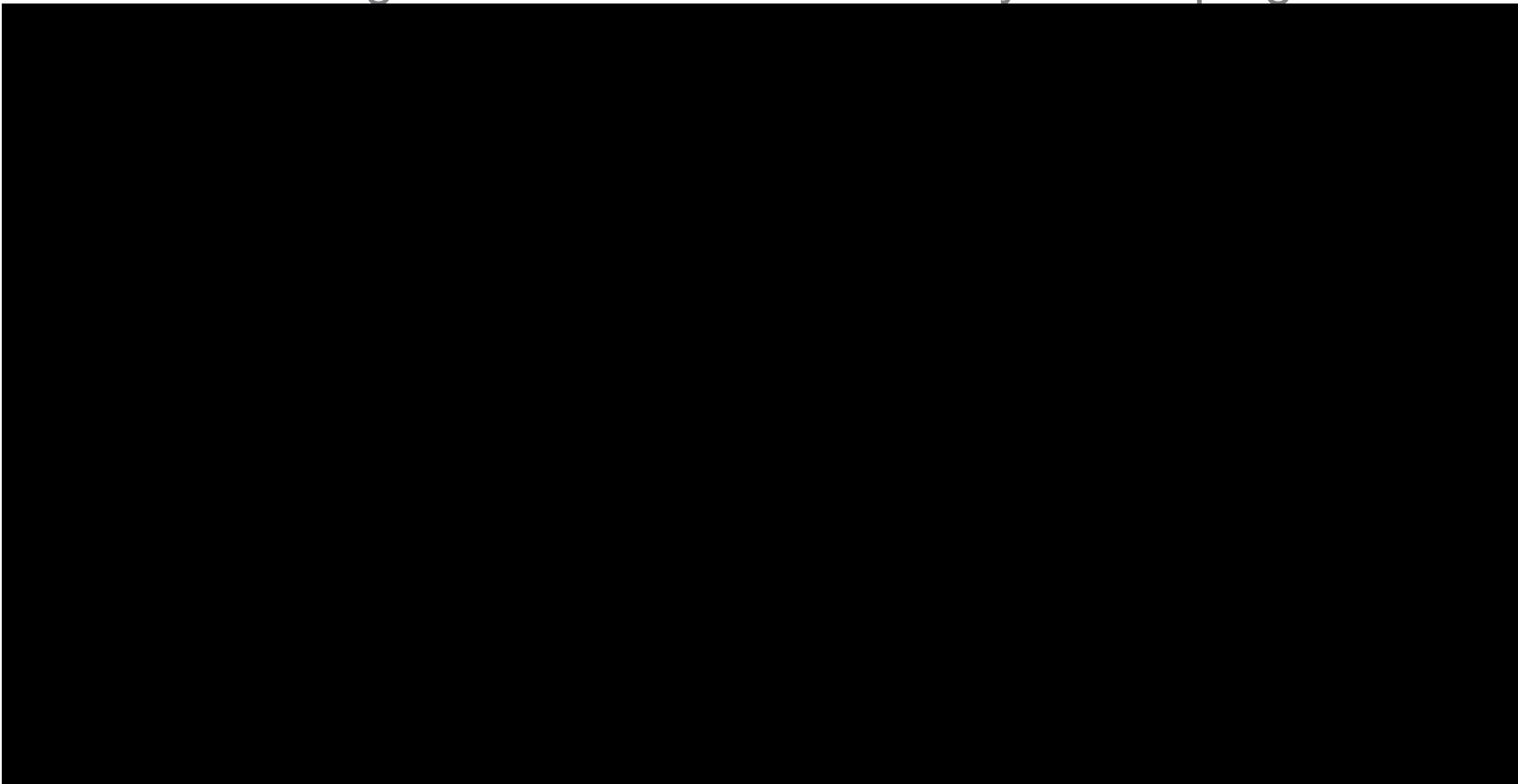
## Previous iterations of the five-year plan reflected fuel market circumstances that are no longer expected

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- Non-regulated revenue projections assumed:
  - Current TOTE contract
    - \$0.52/gal pricing
    - Take or pay requirement
  - Unsubscribed merchant capacity priced consistent with TOTE contract
  - Fully contracted merchant business case assumes:
    - 75% in 2021 (May 2021 mechanical completion)
    - 100% in 2022 and beyond
  - Regulated revenue projections assumed full rate recovery



LNG marketing efforts are focused on fully developing



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WAC 480-07-160**

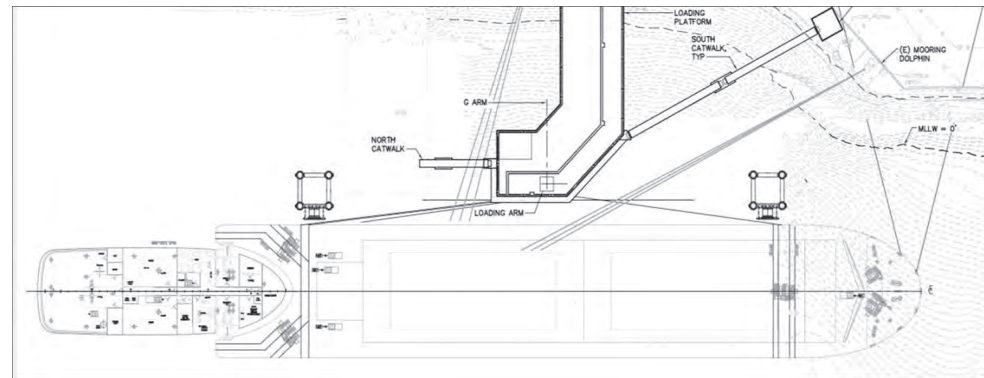


# We are currently working on several options to accelerate our ability to fully market PLNG capacity

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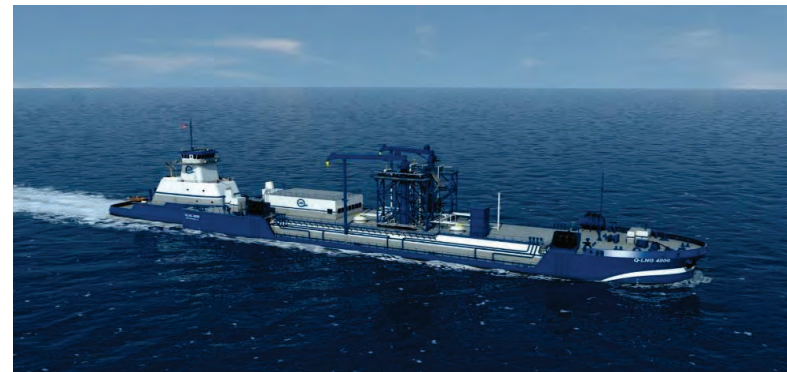
## Option 1: Utilize a standard configuration bunker barge:

- Engage Port of Tacoma and permitting agencies to install a new breasting dolphin north of the TOTE loading dock
- Timeline of 24-36 months
- Capital cost of roughly \$1M

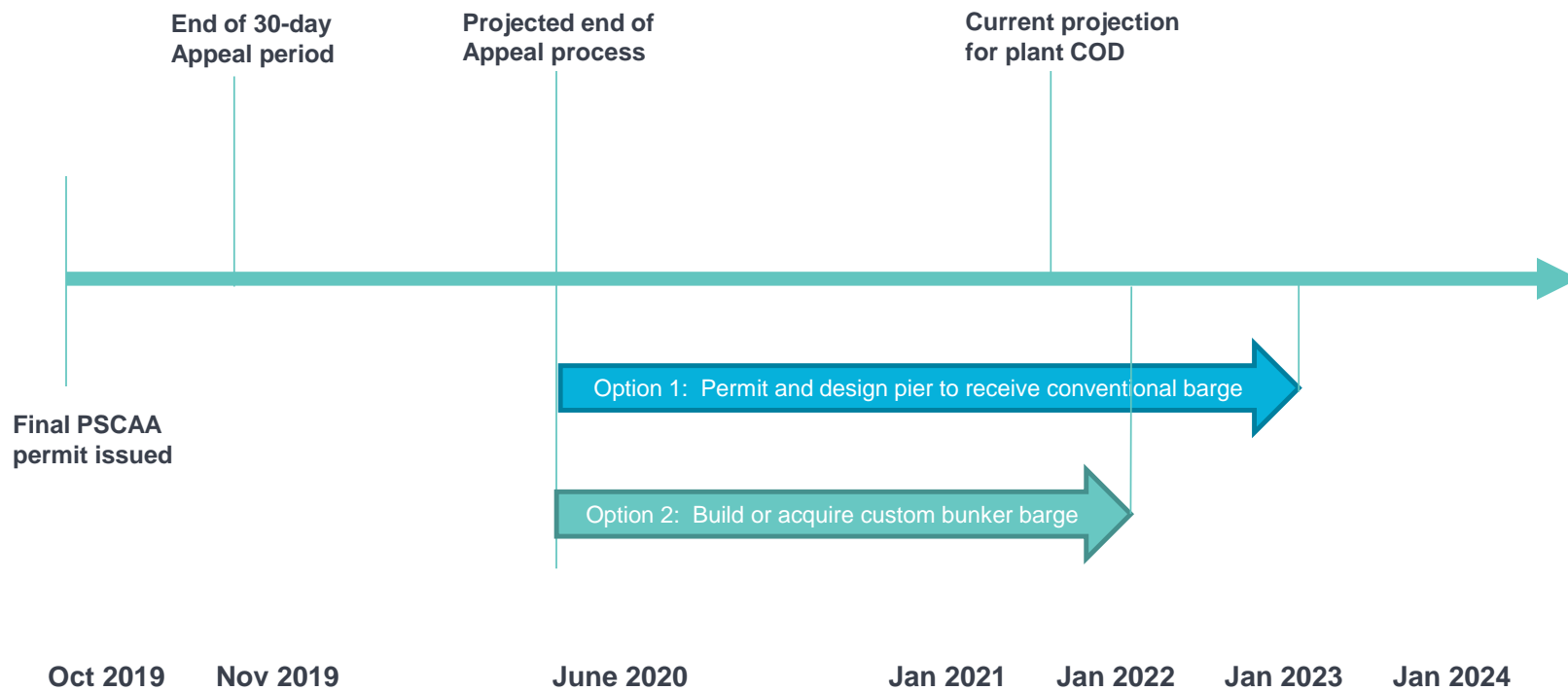


## Option 2: Acquire special-configuration bunker barge to use existing dock:

- Timeline of 18-24 months
- 2.a: Third-party (non-PE) vessel
- 2.b: PE-funded vessel (\$15-35M – analysis assumes midpoint)



# Timeline of options being considered to fully market PLNG unsubscribed capacity

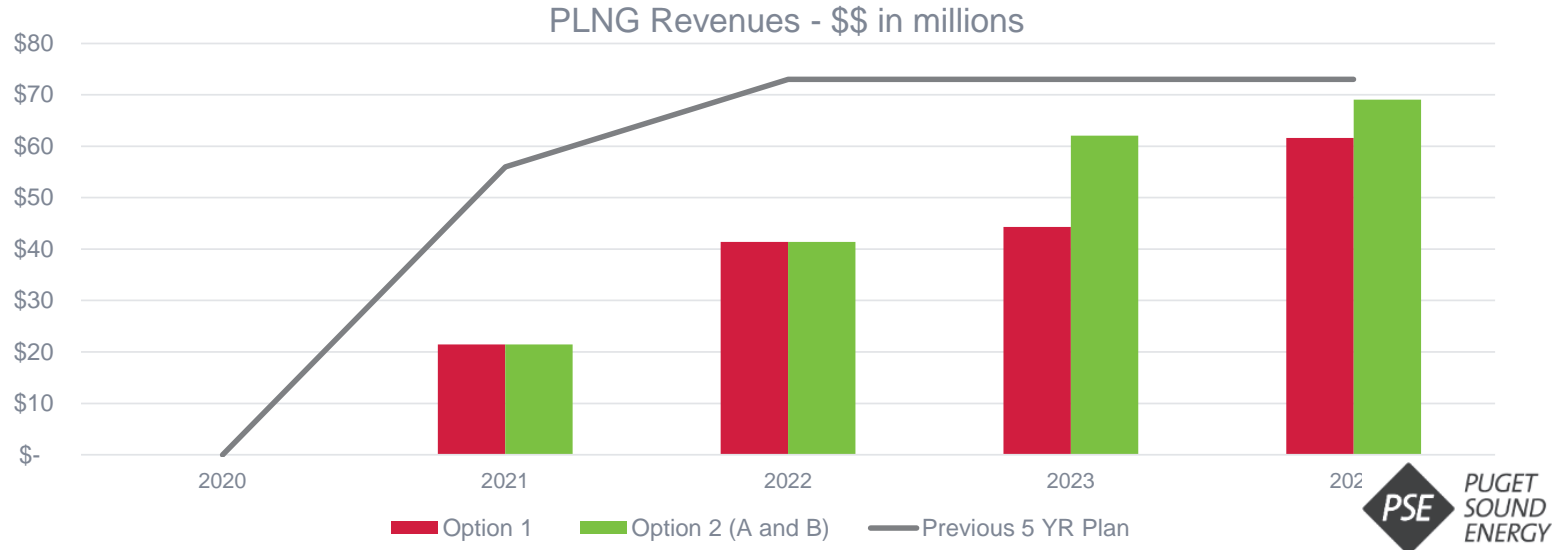


# We recommend revisions to PE's revenue projections to reflect the impact of these near-term marketing limitations and risks

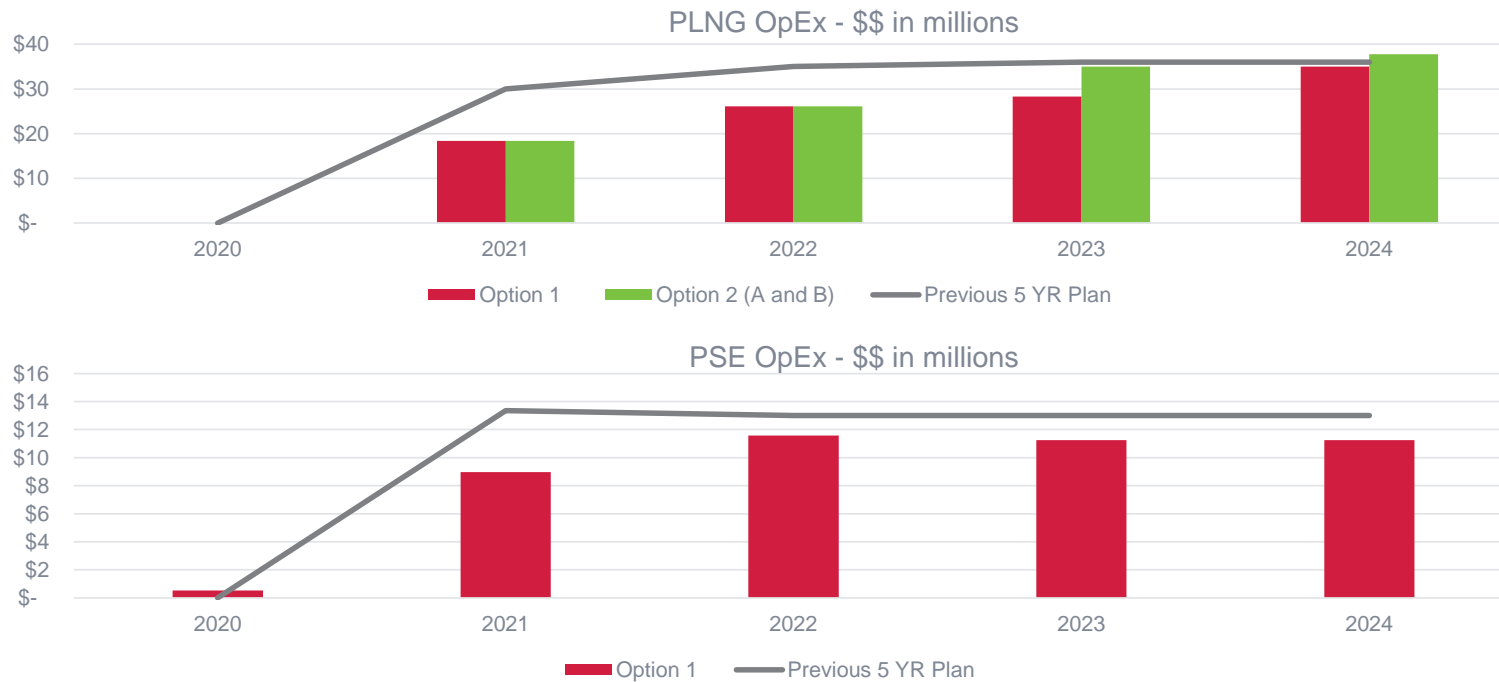
Common changes from the previous five-year plan are:

- (\$5M) in 2021 to reflect delayed fuel delivery commencement date (6/1/2021)
- (\$1M) annually to reflect pricing risk on open capacity
  - \$0.52, based on estimated market for large maritime customers (\$0.45 - \$0.52)

Additional reductions reflect limit on open capacity sold, pending availability of dolphin (Option 1) or custom bunker barge (Options 2A & 2B)



# Increased opex for NAES pricing and IT maintenance offset near-term by lower variable costs due to delay in serving the unregulated market

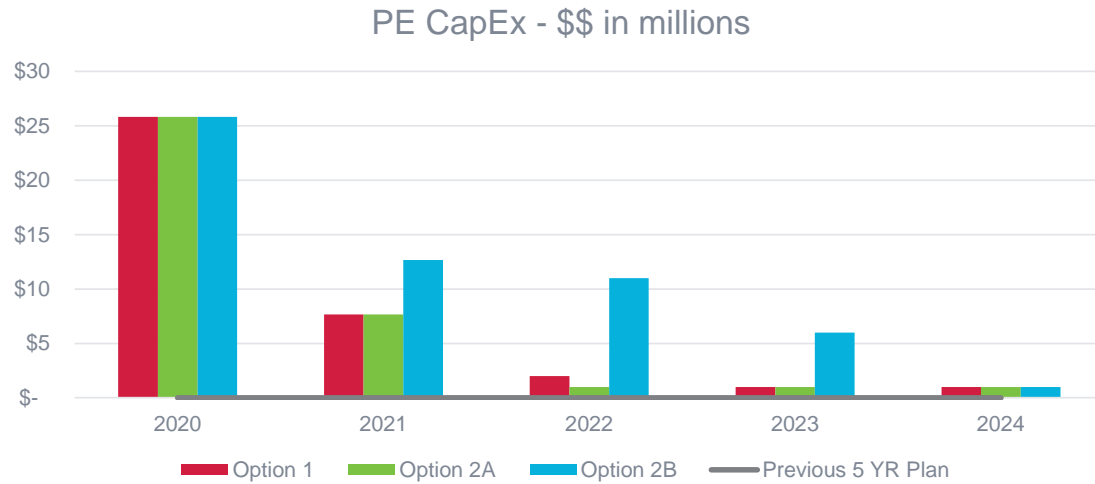


Incremental opex, shared between PLNG and PSE, expected for:

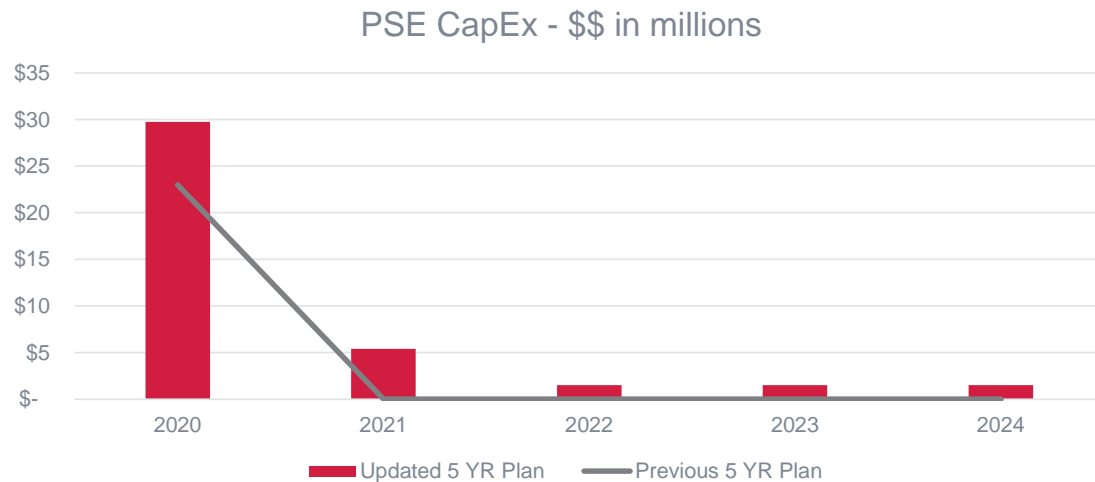
- NAES Operator pricing in excess of PSE staffing estimate, at \$4M in plan
- FTEs expected to support LNG plant during standup and long term, at \$4M in plan
- Annual IT maintenance costs, at \$2M/year



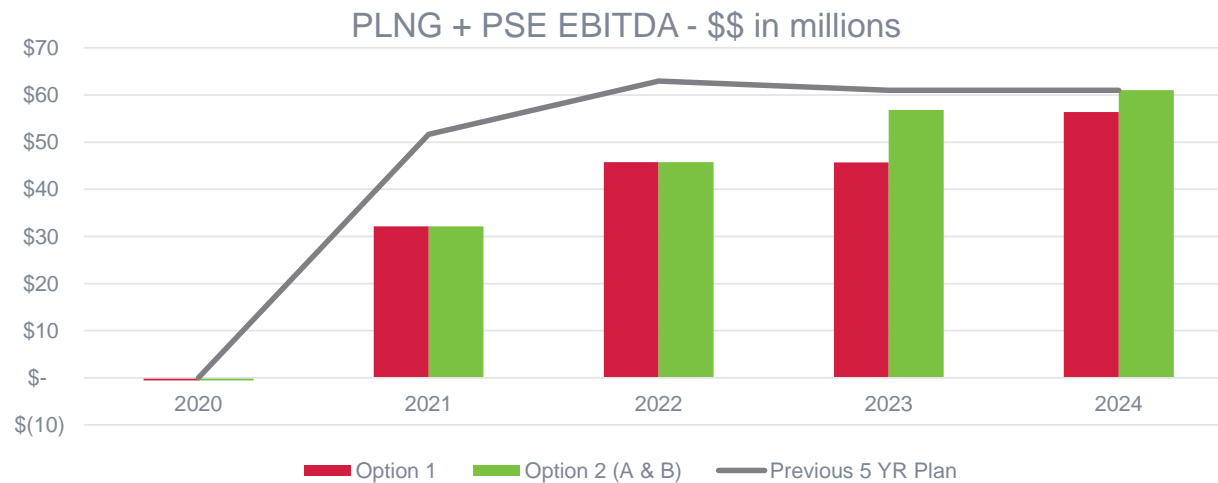
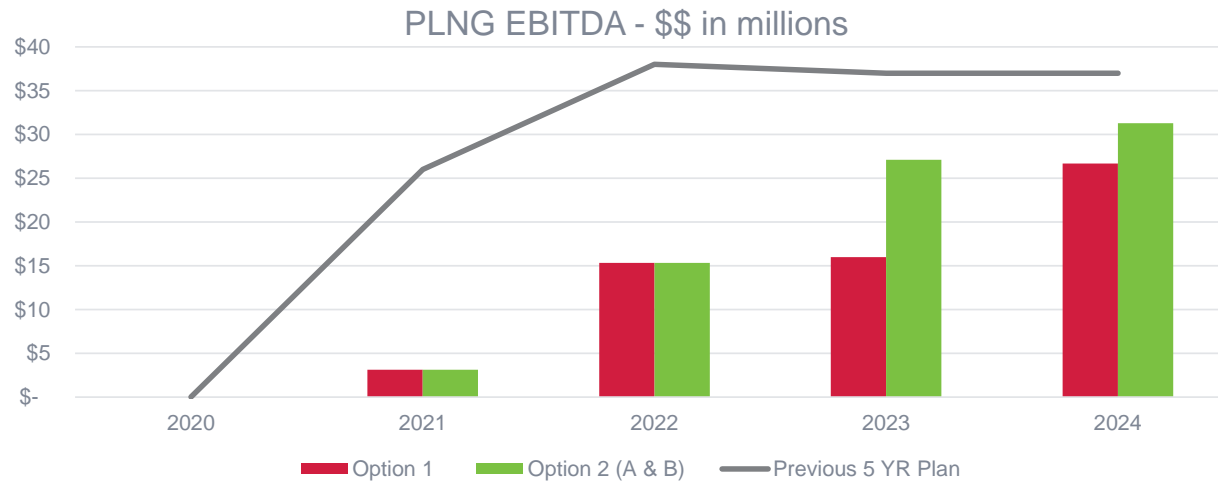
# Revisions to capex reflect current construction estimates, IT and capital spares spend, with additional PE spend in 2022-2023 for potential dolphin or bunker barge options



- \$11M IT spend
- \$8M capital maintenance + spares
- Fuel marketing options
  - \$1M dolphin
  - \$25M bunker barge - internal
  - \$0M bunker barge - external



# The overall impact of these recommended revisions to PE EBITDA is reflected in the charts below



Recommendations focused on areas of relative certainty, using:

- Known fuel market limitations
- Current TOTE contract
- Most recent NAES pricing, which exceeds comparable cost previous modelled
- Deloitte and PSE expertise to estimate IT costs + capital spares



# Discussions with TOTE are underway to amend Fuel Supply Agreement

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- Existing contract terms negotiated in 2014 do not reflect current schedule and include:
  - 10-year term starting Jan 1, 2019
  - Cost of service pricing (adjusted to term length)
  - Minimum volume take starting year one
  - In service date for LNG plant of Jan 1, 2021
- TOTE and PSE delays have created misalignment in contract term:
  - TOTE unable to take first LNG until spring 2021; full volumes starting mid-2022
  - PSE delays due to PSCAA air permit; first LNG available July 2021
- Collaborative meetings with TOTE focused on key outstanding issues:
  - Interim fuel supply
  - Preliminary supply period (ramp to full volumes)
  - Contract term
  - Project budget





# CB&I is exploring an accelerated construction schedule to align with original FSA contract date

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- Current plant completion date estimated for July 2021:
  - Peaking resource unavailable for winter 2020/21
  - TOTE will be ready to receive first LNG in March 2021
- Investigating accelerated construction schedule to meet Jan 1, 2021 completion date:
  - CB&I to provide detailed schedule feasibility and cost proposal
- Accelerated schedule to Jan 1, 2021 ensures:
  - Winter 2020/21 peaking resource
  - Full alignment with current TOTE FSA requirement



**Presentation to the PSE Board of Directors**

**May 6, 2020**

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# Tacoma LNG Project Update

Ron Roberts – Director Generation and Natural Gas Storage



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May 6, 2020

# Tacoma LNG Update – May 2020

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- Construction & Operations
- Legal



# Tacoma LNG Construction/Operations Update

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- COVID-19 impacts have been minimal.
  - Impact to critical path estimated to be 1.5 weeks or less
- No impacts to approved Project Outlook - \$444M
- NAES Corp. (with Lisbon Group support) Contract in-place as Operator since January, 2019
  - Hiring of plant staff underway
- PLNG provided TOTE with a proposed contract amendment in mid-November
  - Provided a 2-yr preliminary delivery period with no minimum take
  - Met the request to have Fixed Charge <\$45
  - 10 yr term
  - 5 year renewal option
  - Subsequent negotiations have discussed alignment on some terms and still some work to do on others

# Legal Update

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- Earthjustice and the Puyallup Tribe have both filed separate appeals to the Pollution Control Hearings Board (PCHB) in December 2019 and a two week hearing was set for March 2021
- Appellants each filed a motion to stay the construction of the project pending the outcome of the appeals and the PCHB denied these requests for a stay in March 2020
- Appellants are appealing the stay denial and in the meantime requested an expedited hearing schedule and the PCHB set new hearing dates for October 2020
- Discovery is ongoing between the parties and depositions will likely begin in summer 2020

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# Appendix Tacoma LNG Update

Ron Roberts – Director Generation and Natural Gas Storage



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May 6, 2020

# Tacoma LNG Construction Update – March 2020 Aerial Photo





# Tacoma LNG Construction Update – Tank and Flare



# Tacoma LNG Construction Update – Pre-Treatment System



# Tacoma LNG Construction Update – Blair Loading Platform



**Presentation to the PSE Board of Directors**  
**August 20, 2020**

# LNG Project Update



August 26, 2020

# Tacoma LNG Update – August 2020

- Construction & Operations
- Legal
- TOTE Supply Contract



# Tacoma LNG Construction/Operations Update

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- COVID-19 impacts have been minimal.
  - Construction on schedule, one confirmed case
- Completed vacuum testing and pulling supply lines to TOTE Terminal
- No impacts to approved Project Outlook - \$444M, however, all contingency has been used and legal costs continue to accrue
- NAES Corp. (with Lisbon Group support) Contract in-place as Operator since January, 2019
  - Plant Manager, Operation Supervisor on site, staff hiring is moving on schedule.

# TOTE Maritime Contract Update

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- PLNG provided TOTE with a restated proposed amendment in February
  - Provided a 2-yr preliminary delivery period with no minimum take
  - Met the request to have Fixed Charge <\$45
  - 10 yr term
  - Two 5 year renewal options
- Subsequent discussions focused on renewal periods
  - Verbal proposal to amend renewal terms with one 5 yr renewal period with revised pricing for that term provided
  - Feedback at working levels positive. Buy in by TOTE Executives is in works
- TOTE Ship Conversion Timing



## Legal Update

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- Earthjustice and the Puyallup Tribe have both filed separate appeals to the Pollution Control Hearings Board (PCHB) in December 2019 and a two week hearing previously scheduled for October 2020, now delayed until March 8-19, 2021
- Discovery is ongoing between the parties and depositions have started and will continue through 2020
- The PCHB has indicated that they will deny a request by the Tribe to bifurcate the hearing into a SEPA challenge, and a permit issuance challenge

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# Appendix Tacoma LNG Update

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PUGET  
SOUND  
ENERGY

# Tacoma LNG Construction Update – March 2020 Aerial Photo



# Tacoma LNG Construction Update – Tank and Flare



# Tacoma LNG Construction Update – Pre-Treatment System



# Tacoma LNG Construction Update – Blair Loading Platform

