PLAINS ALL AMERICAN PIPELINE, L.P.

PLAINS GP HOLDINGS

Midstream Oil Market Update
IPAA/TIPRO Luncheon

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September 13th, 2017

Forward-Looking Statements & Non-GAAP Financial Measures Disclosure

- **This presentation contains forward-looking statements, including, in particular, statements about the plans, strategies and objectives for future operations of Plains All American Pipeline, L.P. ("PAA") and Plains GP Holdings, L.P. ("PAGP"). These forward-looking statements are based on PAA's current views with respect to future events, based on what we believe to be reasonable assumptions.**

- **PAA and PAGP can give no assurance that future results or outcomes will be achieved. Important factors, some of which may be beyond PAA's and PAGP's control, that could cause actual results or outcomes to differ materially from the results or outcomes anticipated in the forward-looking statements are disclosed in PAA's and PAGP's respective filings with the Securities and Exchange Commission.**

- **This presentation also contains non-GAAP financial measures relating to PAA, such as adjusted EBITDA. A reconciliation of these historical measures to the most directly comparable GAAP measures is available in the Investor Relations section of PAA's and PAGP's website at www.plainsallamerican.com, select "PAA" or "PAGP," navigate to the "Financial Information" tab, then click on "Non-GAAP Reconciliations." Furthermore, PAA does not provide a reconciliation of non-GAAP financial measures to the equivalent GAAP financial measures on a forward-looking basis as it is impractical to forecast certain items that it has defined as "Selected Items Impacting Comparability" without unreasonable effort.**

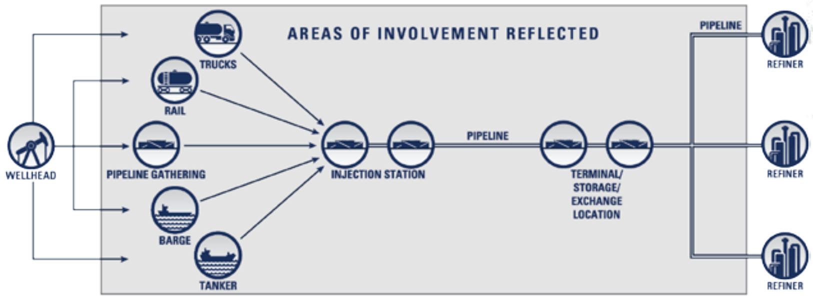
Discussion Outline

- **Brief Overview of Plains All American & Harvey/Irma Update**
- **Crude Oil Midstream Market Update**
- **PAA Capabilities & Reliable Access to Markets**

Brief Overview of Plains All American & Harvey Update

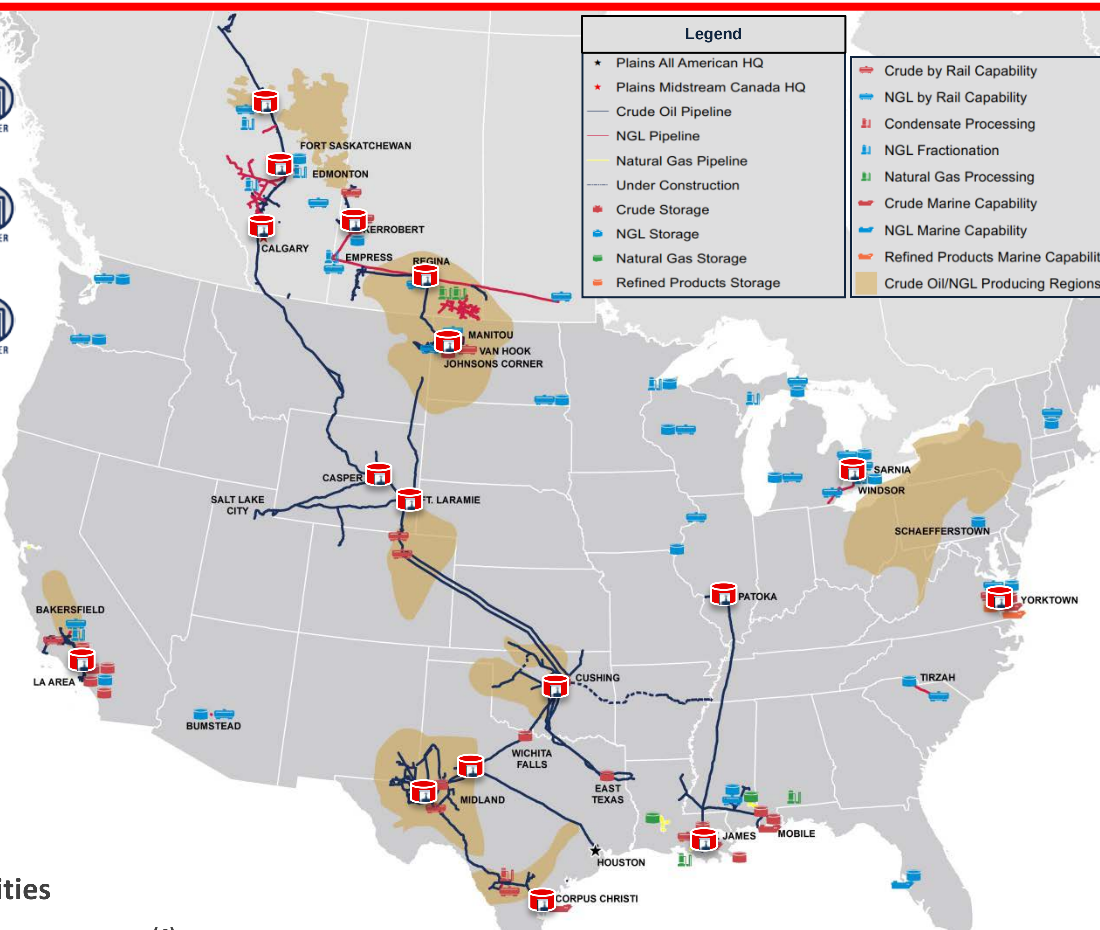
PAA Has One of the Largest and Most Integrated Crude Oil Pipeline & Terminal Systems in North America

PAA's Crude Oil Value Chain



Plains' Current Profile

- **Volumes Handled:**[1]
  - ✓ **>5 mmb/d Transportation volumes**
  - ✓ **~1.1 mmb/d Supply & Logistics**
- **Total Enterprise Value: ~$28B**[2]
- **PAA Total Assets: ~$24B**[3]
  - ✓ **~20k** active pipeline miles
  - ✓ **>140 mmbls** of liquids storage
  - ✓ **~70 Bcf** of natural gas storage
  - ✓ **~230 mb/d** net capacity at fractionation facilities
  - ✓ **~10B cf/d** net capacity at natural gas processing facilities[4]
  - ✓ **>30** rail facilities (crude & NGL)
  - ✓ **>10k** crude & NGL railcars
  - ✓ **>800** trucks (~1,900 trailers)



Note: Map contains only most significant PAA assets, including recent/pending acquisitions, current projects and equity-investments assets (excludes non-core assets where sale is announced/pending).

(1) Average daily Transportation segment and Supply & Logistics segment volumes for the quarter ending 06/30/17.
(2) Based on balance sheet data as of 06/30/17 and closing unit prices as of 09/7/17 .
(3) Asset data as of 12/31/16, adjusted for assets sales closed through 06/30/17
(4) Natural gas processing capacity also includes approximately 2.5 Bcf per day for a long-term liquid supply contract. Average daily Transportation segment volumes for the quarter ending 06/30/17.

Hurricanes Harvey/Irma Update

- **Top priority – safety of PAA employees, their families & communities**
  - ✓ All PAA employees accounted for and safe
    - Many experienced substantial loss and face a challenging road ahead
  - ✓ PAA is providing support to employees and community members
- **Operationally – activated crisis management procedures to address employee safety, mitigate potential damage to Plains assets & service our customers**
  - ✓ Plains operated assets experienced minimal damage, minor outages, and are currently operational, subject to receipt/delivery capabilities of our customers and connecting carriers
- **Commercially – worked with customers to provide alternatives for movements scheduled to third-party assets that were not in service**

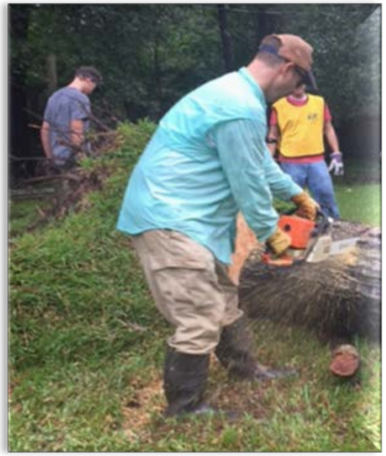
PAA Prepared and Equipped to Assist Employees/Community & Maintain Producer/Shipper Services

Water, fuel, labor, transportation, housing, generators, bug spray, emotional & moral support……

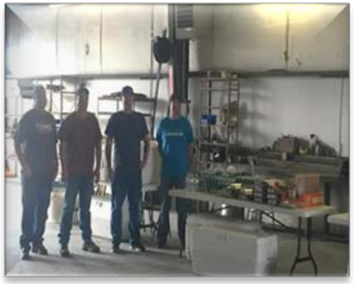






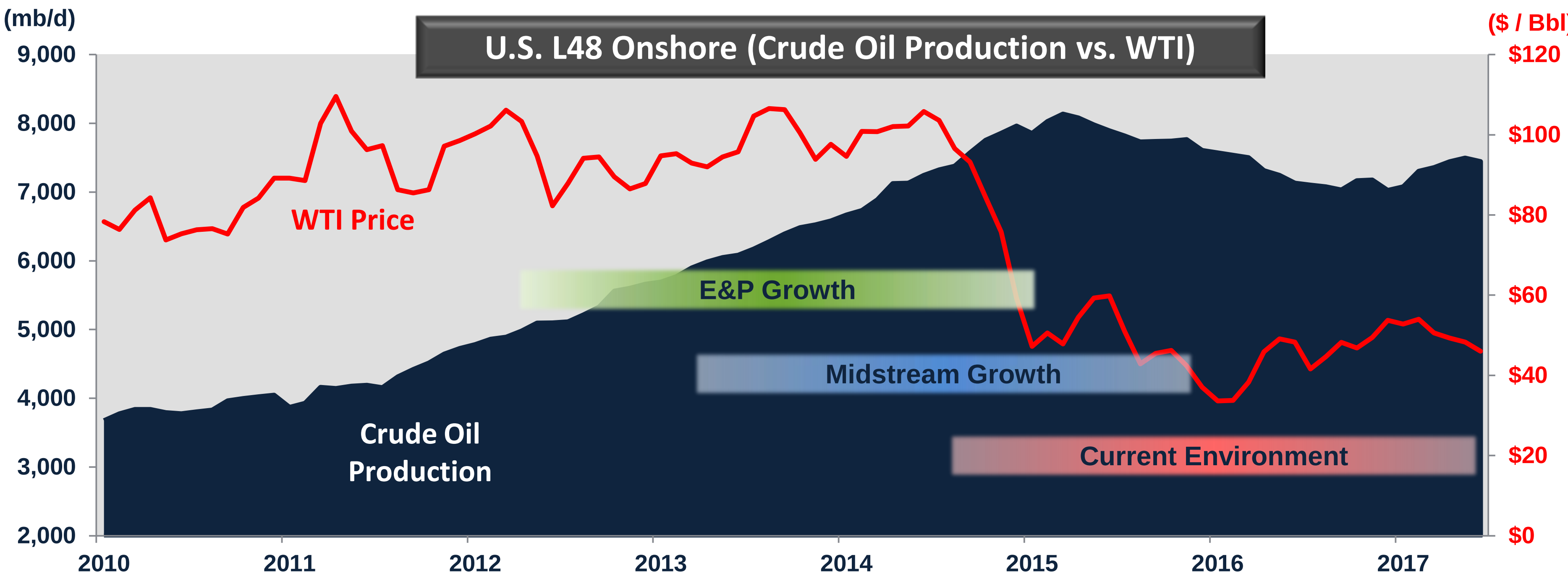




Crude Oil Midstream
Market Update

Overview of Current Cycle



E&P Growth

- Strong global economy drives higher oil prices
- Horizontal drilling significantly increases US crude oil production
- Low cost of capital

Midstream Growth

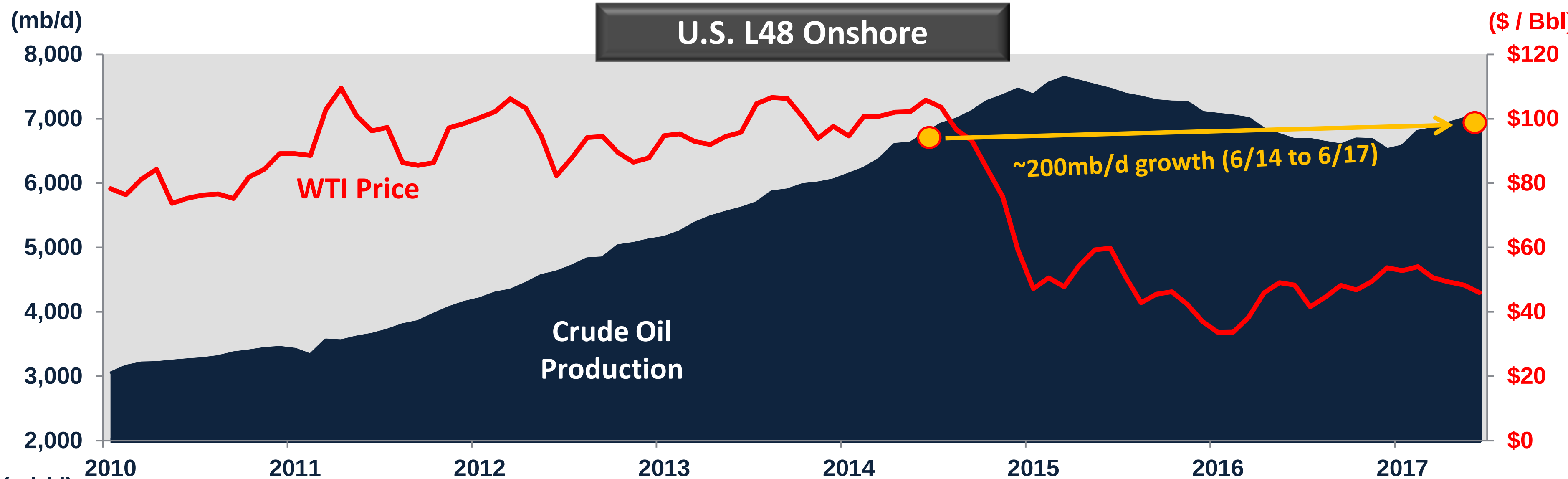
- Production growth results in midstream bottlenecks
- >$35 billion in growth projects
- New projects backed by MVC commitments
- Low cost of capital

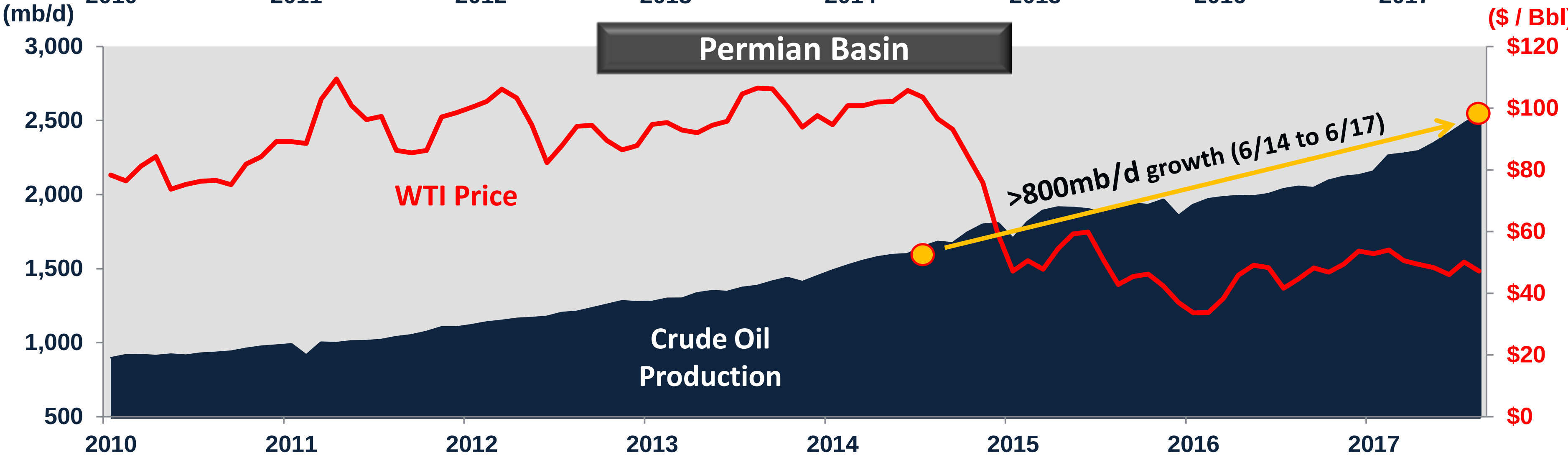
Current Environment

- Lower oil prices, lower L48 production
- Producers high-grade basins / wells
- Technology/Innovation = lower break-even economics
- Surplus pipeline capacity – competitive Midstream market

Source: EIA

Permian Basin Has Driven U.S. Production from 2014 Through 2017





Source: EIA

Permian Basin Expected to Provide >50% of US / Canadian Production Growth Through 2018

- **2Q 2017 Case assumes $55 WTI and producers outspend cash flow as follows:**

% Outspend	Permian	Eagle Ford	STACK	DJ	Williston	Total Outspend
2017	20%	0%	60%	20%	0%	~$8.5 B
2018	20%	10%	50%	20%	10%	~$12.0 B

2Q 2017 Case				Δ from 2016 to 2018	
Production Area (mb/d)	**YE'15**	**YE'16**	**YE'18**	**(mb/d)**	**%**
Permian Basin	1,870	2,140	3,440	1,300	61%
STACK	90	110	305	195	177%
Eagle Ford	1,460	1,170	1,495	325	28%
DJ Basin	330	295	435	140	47%
Williston Basin	1,220	1,010	1,200	190	19%
All Other Areas	2,190	1,940	1,855	(85)	-4%
GoM/Gulf Coast	2,065	2,125	2,155	30	1%
Total U.S.	**9,225**	**8,790**	**10,885**	**2,095**	**24%**
Western Canada	4,165	4,210	4,775	565	13%
Eastern Canada	175	185	265	80	43%
Total Canada	**4,340**	**4,395**	**5,040**	**645**	**15%**
Total N.A.	**13,565**	**13,185**	**15,925**	**2,740**	**21%**

+2.00 mmb/d

(380) mb/d Y/Y

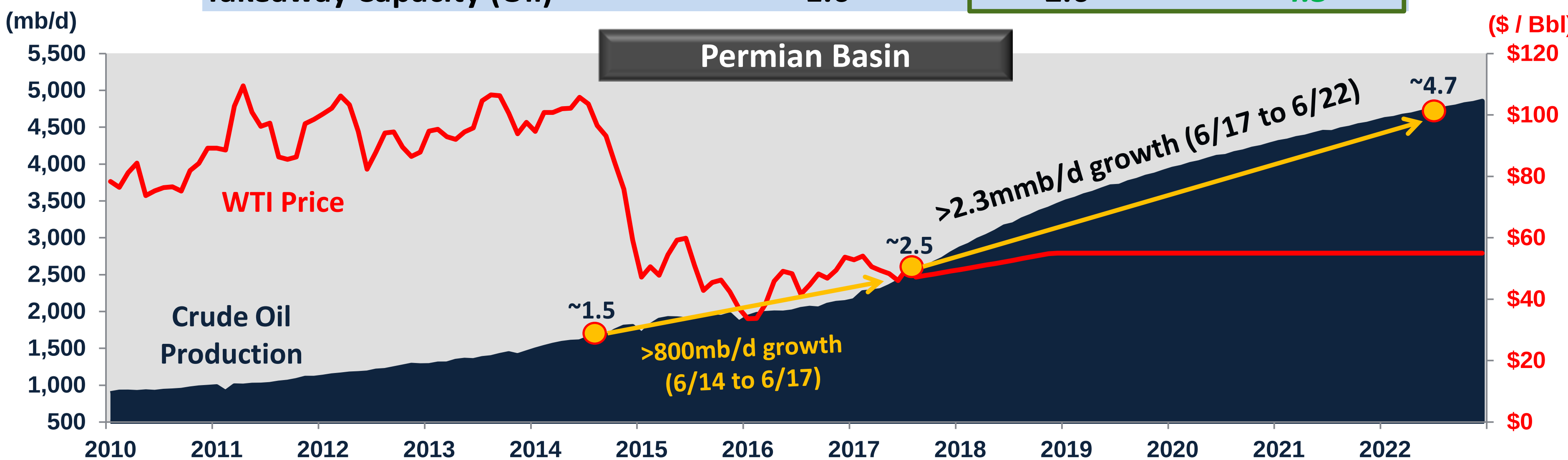
Source: Drilling Info, Wood Mackenzie (GoM), PAA Estimates

Note: Table is illustrative based on assumed capital spending and activity levels.

Permian Basin – Improved Technology, Innovation & Efficiencies Drive Growth, Requiring Additional Midstream Infrastructure

Selected Permian Data (Past, Present, Potential)

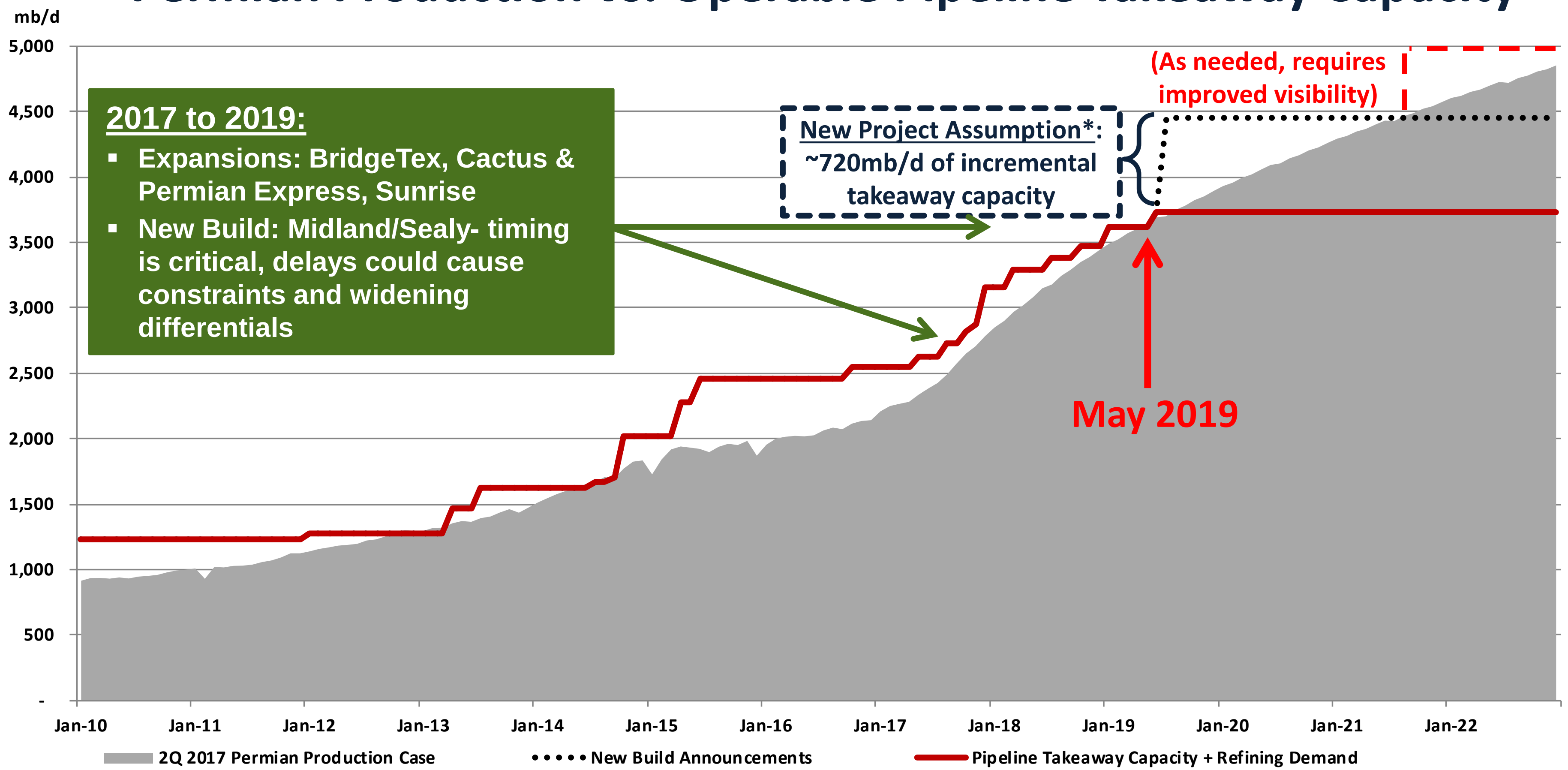
	Jun-14	Jun-17	Jun-22*
WTI	$106	$46	*$55*
Rig Count	554	385	*340*
Production (Oil)	1.5	2.5	*4.7*
Midland - Cushing Differential	$6.65	$0.80	*Cost of Tariff*
Takeaway Capacity (Oil)	1.6	2.6	*4.3*



***PAA Analysis assumes $55 crude oil price, 340 rig average, Permian producers outspend cash flow for a period of time and no improvement in efficiencies.**

Permian Growth Drives Demand for Additional Pipeline Takeaway Capacity as Early as 2019

Permian Production vs. Operable Pipeline Takeaway Capacity

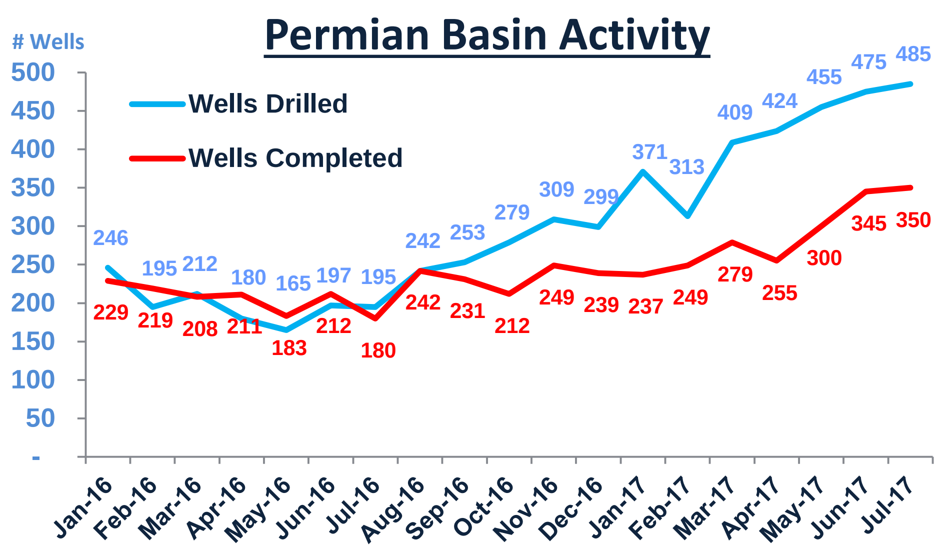


**Represents PAA's current assessment of additional takeaway capacity projects to be completed. Note: Operable Capacity assumes average 22 of 24 hour day*

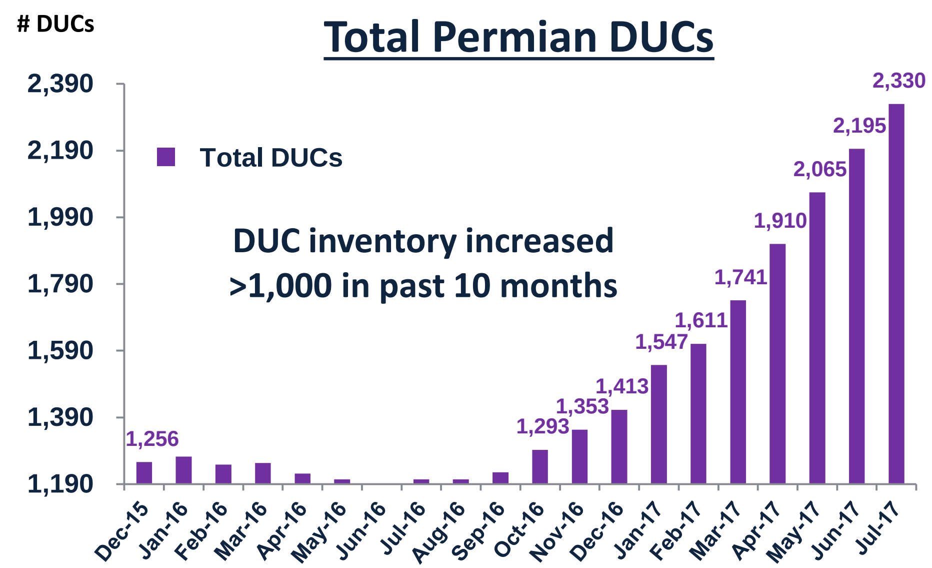
Source: Company Filings, PAA estimates

Additionally, Increasing Permian DUC Inventory Supports Production Growth Visibility

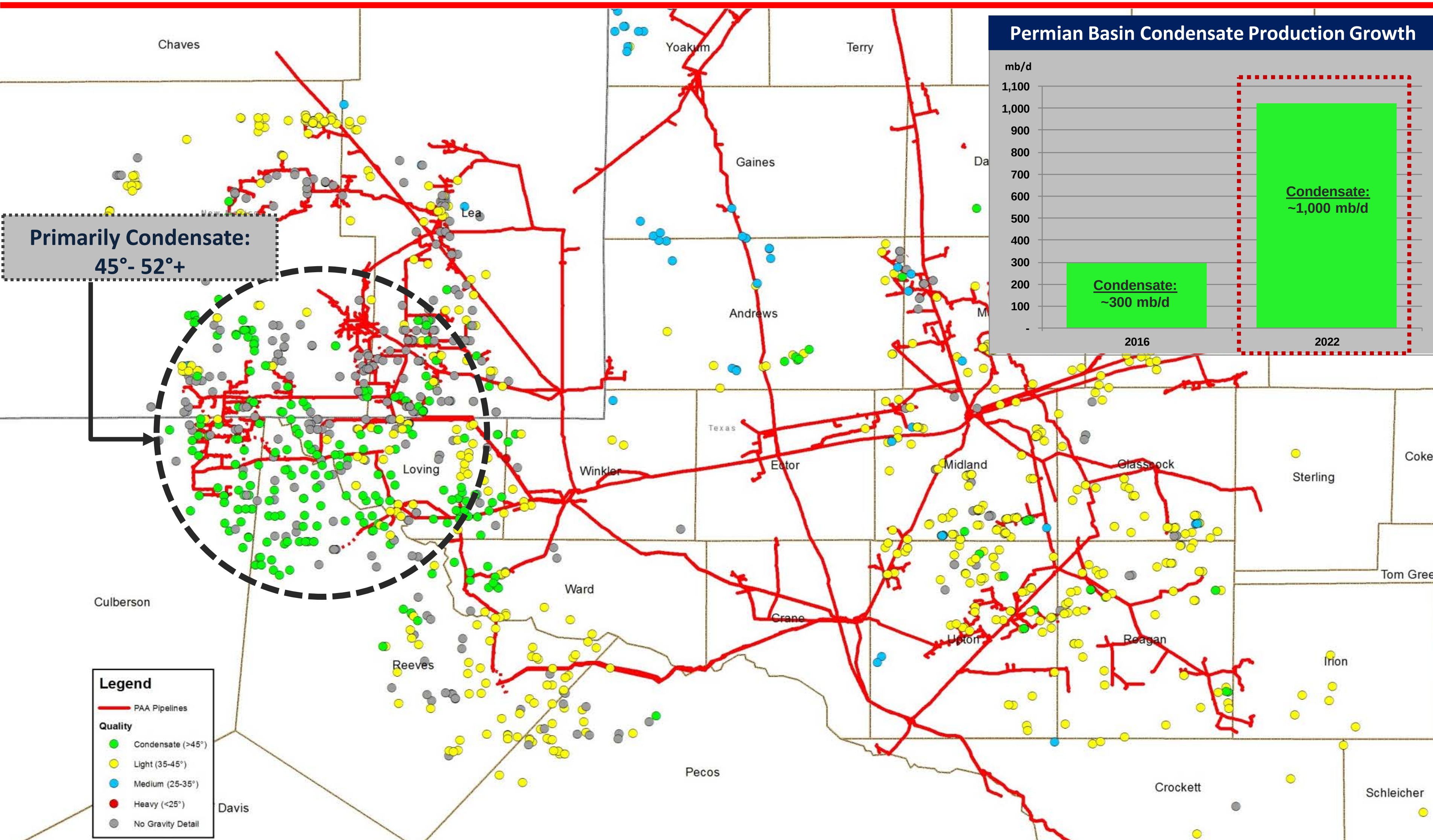
- **Drilling activity levels and well results are in line / ahead of our Permian forecasts**
- **However, completion activities of drilled wells are lagging -- primarily associated with shift to multi-well drilling / completion pads and scheduling / availability issues for frack equipment and crews; has resulted in a significant increase in Permian DUCs**
  - ✓ **Timing of producer completions remains the most significant variable in any forecast (ex weather).**
- **DUC inventory provides visibility for volume growth in 2018, if rig activity slows**



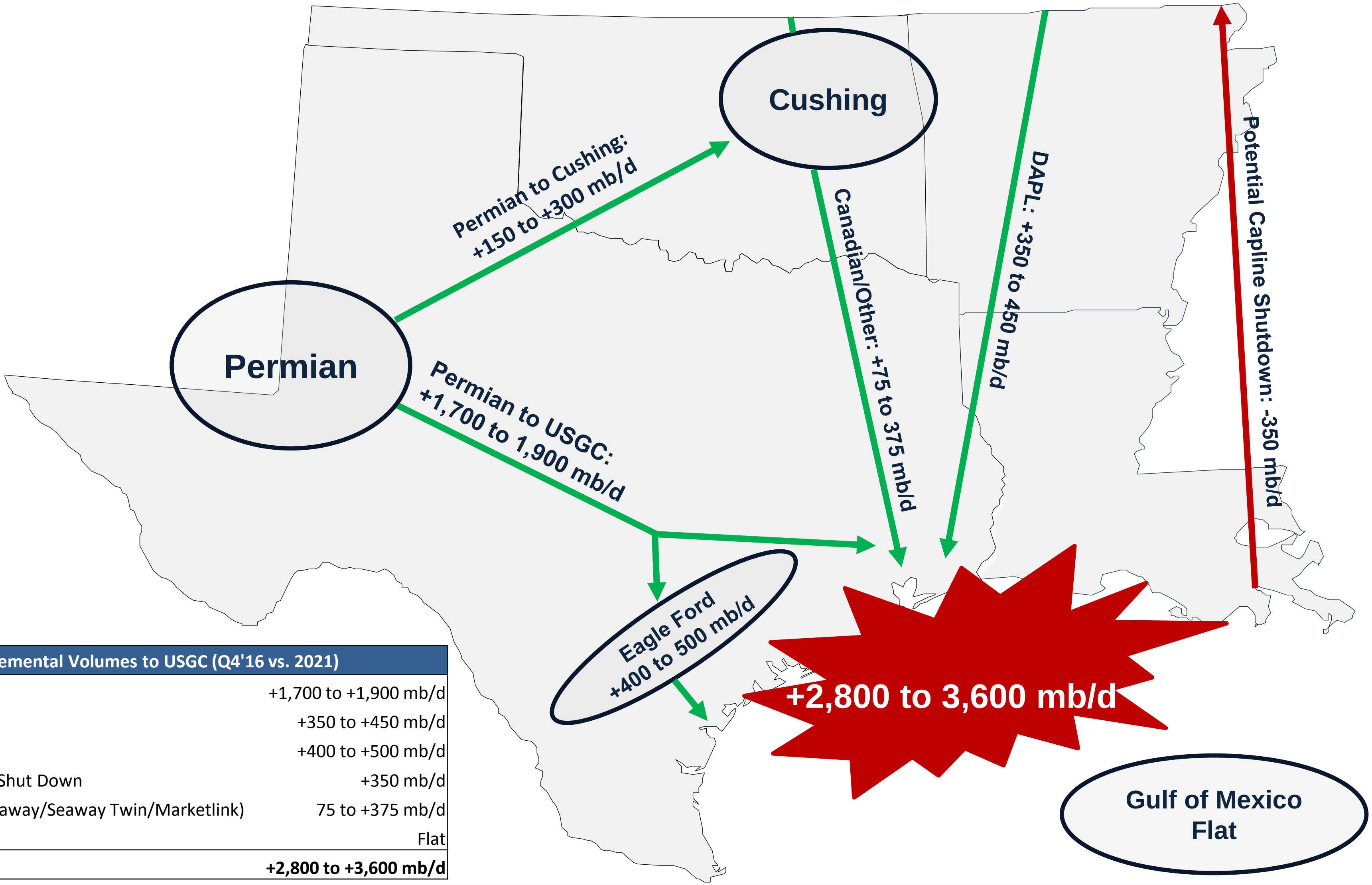
Note: EIA data as of Sep 1, 2017



Quality Matters: Increasing Condensate Volumes Likely Requires Segregation Infrastructure



Expect Majority of Incremental Permian Production to Flow to the Gulf Coast and Will Require Export



Incremental Volumes to USGC (Q4'16 vs. 2021)	
Permian	+1,700 to +1,900 mb/d
DAPL	+350 to +450 mb/d
Eagle Ford	+400 to +500 mb/d
Potential Capline Shut Down	+350 mb/d
Canada/Other (Seaway/Seaway Twin/Marketlink)	75 to +375 mb/d
Gulf of Mexico	Flat
Total	**+2,800 to +3,600 mb/d**

Source: Company Filings, PAA estimates

PAA Capabilities & Reliable Access to Multiple Markets

PAA's System Designed to Meet Producer/Shipper Needs

- **Flow assurance and operational reliability**
  - ✓ Large network with significant capacity /flexibility– trucking, PL gathering, intra-basin PL, long-haul PL & storage
  - ✓ Active in multiple basins (one-stop shop benefit)
  - ✓ Decades-long strong operational track record
    - Complemented by PAA's lease gathering capability
    - Kept Customers' volumes flowing during hurricane Harvey

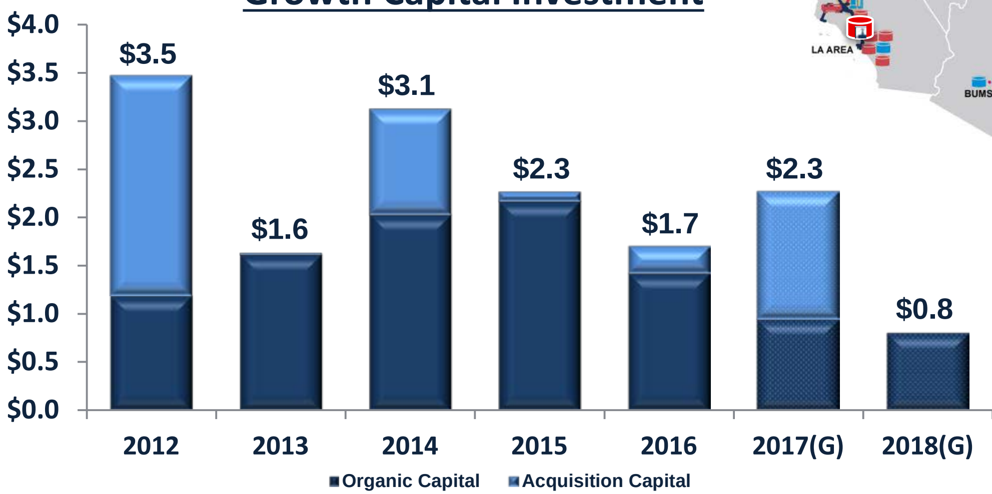
- **Quality management**
  - ✓ Integrated, flexible network with significant tankage enhances PAA's ability to preserve producer's crude quality

- **Access to multiple markets**
  - ✓ System interconnectivity and flexibility provides option value to shippers

Over Past 6 yrs., PAA has Invested >$14B Expanding Network to Service Customer Needs

- **>$9B of Organic Growth Investments**
- **>$5B of Acquisition Investments**
- **Spanning Multiple Areas:**
  - ✓ Permian
  - ✓ Eagle Ford
  - ✓ Mid-Continent
  - ✓ Rockies
  - ✓ Gulf Coast
  - ✓ Canada

Growth Capital Investment



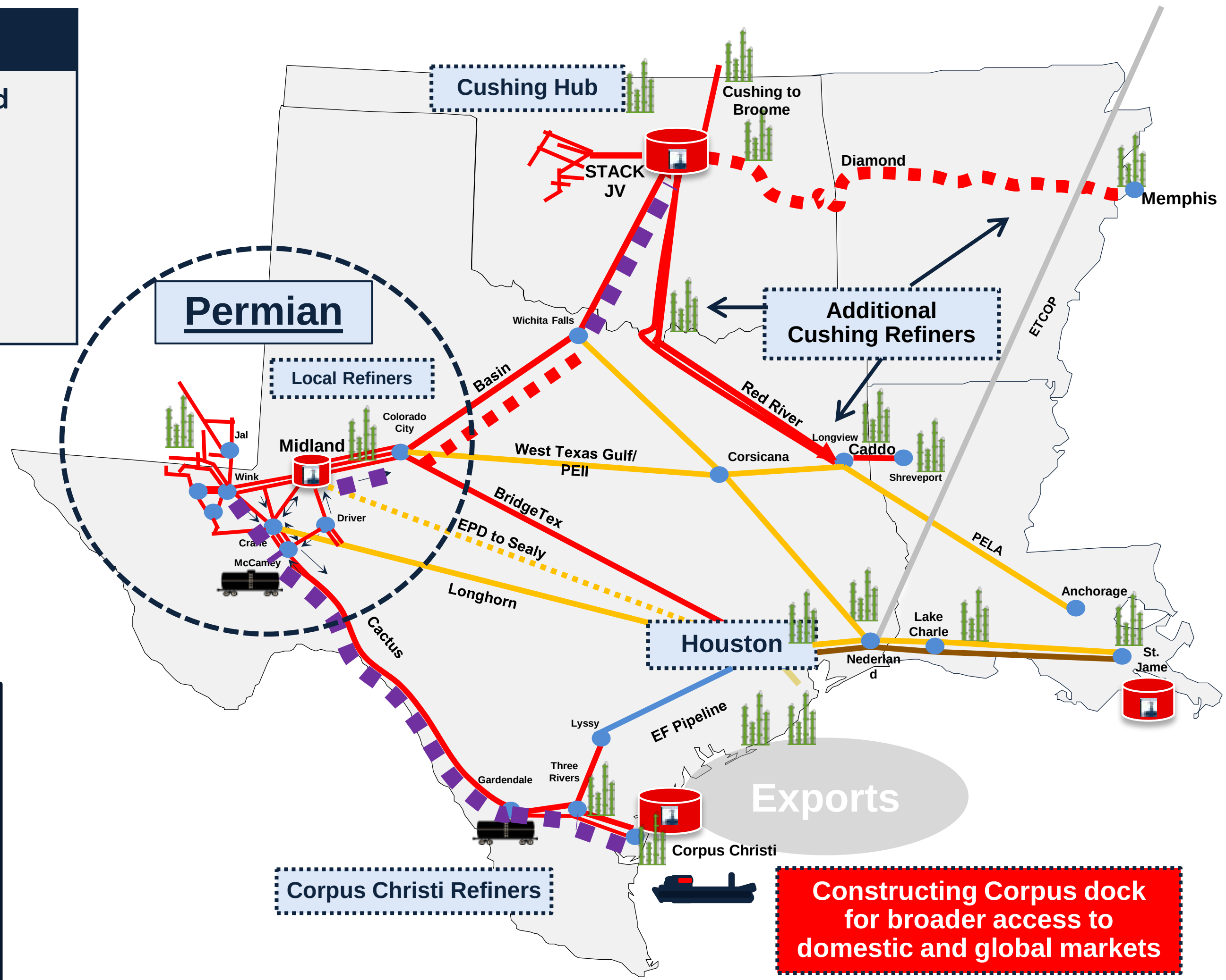
Note: Map contains only most significant PAA assets, including recent/pending acquisitions, current projects and equity investments (excludes non-core assets in which sales are announced/pending). (G) Based on guidance as of 08/25/17.

PAA's Permian System: Unmatched Capacity & Interconnectivity Providing Flow Assurance & Access To Multiple Markets

Permian Basin Assets / Activities	
Transportation Volumes	~2,750 mb/d
Lease Gathering Volumes	~480 mb/d
Active Pipeline Miles	>4,600
Crude Storage Capacity	~15 mmbls
Truck Injection Stations	>120

Capacity To Market

- Gathering: ~2 mmb/d
- Intra-basin: ~1.7 mmb/d
- Long-Haul: ~1 mmb/d

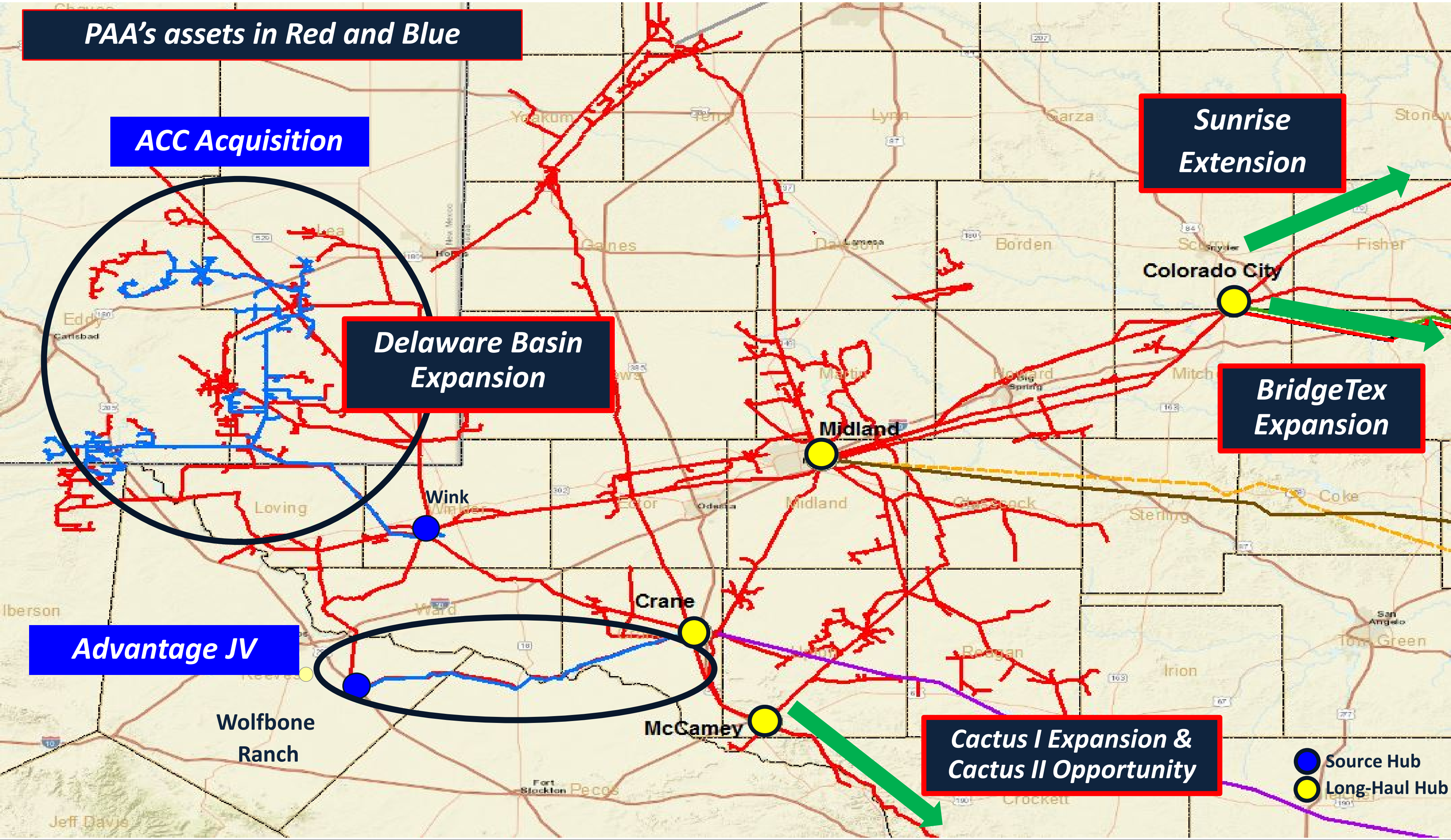


Legend

- PAA Large-diameter Pipelines
- PAA Pipelines Under Construction
- PAA Potential Projects (identified)
- 3rd Party Export Pipelines
- PAA Facility
- PAA Rail Facility
- PAA Dock Facility
- 3rd Party Refinery

Note: Illustrative map, only includes most significant PAA assets and select third party pipelines for context. Volume data as of 6/30/17; other asset data as of 03/31/17.

Permian Investments Extend Reach, Market Access & Further Optimize PAA's Existing Permian Basin System



Note: PAA Asset data as of 03/31/17. Map includes select third party pipelines for context.

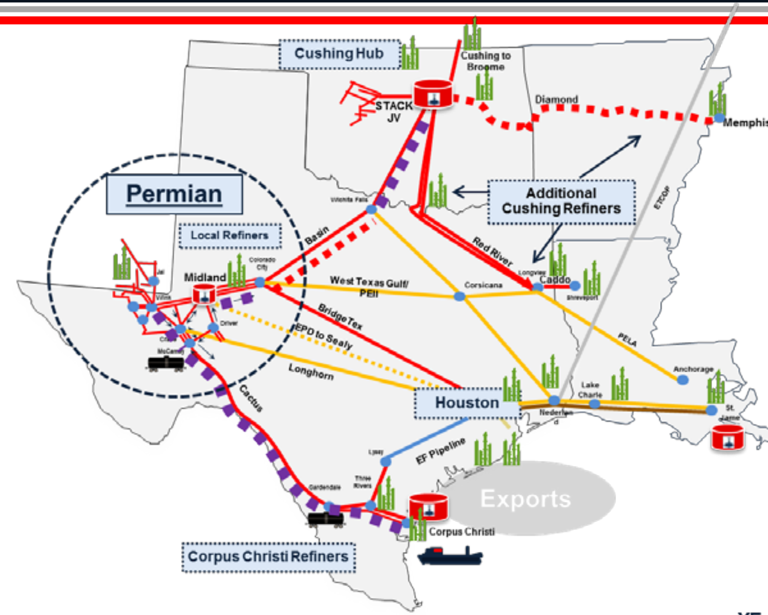
Pursuing Two New Large Diameter Pipeline Expansions to Provide Additional Permian Take-away

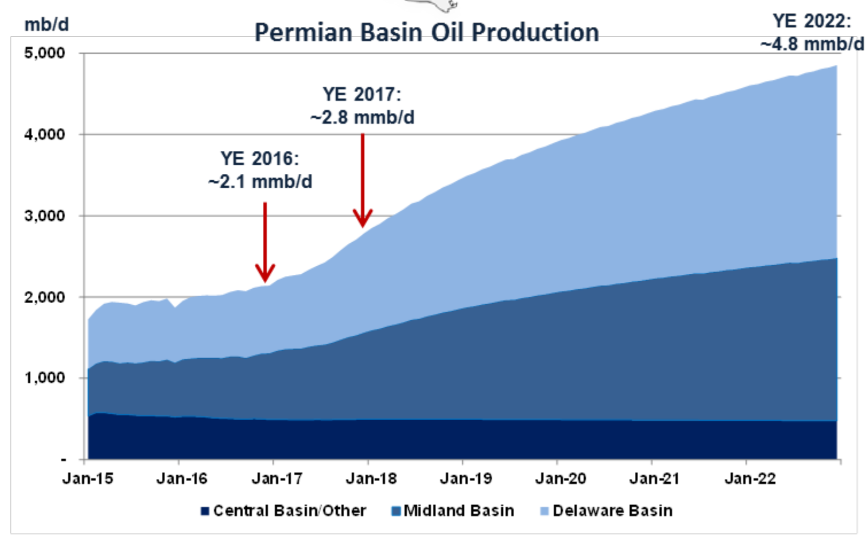
▪ Permian to Cushing, OK

- ✓ Phased approach adding up to 400,000 b/d of potential incremental capacity; moving on combination of expanded, new & existing pipelines
- ✓ Phase I – (120,000 b/d) Delaware Basin to Cushing
  - Extending Sunrise (Colo. City to Wichita Falls)
  - *Underway, targeted completion 1H19*
- ✓ Phase II / III
  - Sunrise extension from Midland to Colo. City
  - Wichita Falls to Cushing

▪ Cactus II – Permian to Corpus

- ✓ Loop/extend existing system would add up to 500,000 b/d of capacity to export markets
- ✓ Advancing discussions with multiple customers
- ✓ Engineering activities ongoing, including ROW diligence and permitting





Come Ship With Us – Lease Gathering Business Provides Additional Producer Services

Flow Assurance

- Shipper history on pipelines provides flow assurance for producers
- Utilizing PAA trucks, rail, barges and/or pipeline connections to move a producers crude oil production

Financial Benefits

- PAA provides competitive, market-based pricing in all major oil producing regions
- Selling to a third party (PAA) creates a clear demarcation for producers in determining the valuation for royalties and taxes
- PAA's balance sheet provides financial security to producers
- PAA provides and manages the linefill requirement for shipping on pipelines

Operational Benefits

- PAA buys all crude oil produced, aggregates and manages the sales and inventory fluctuations, no price or volume exposure to the producer
- We manage and compensate producers for their quality

Administrative Services

- Royalty and tax distribution and reporting
- Automated dispatch system for truck-gathered production
- Pipeline nominations, scheduling and over/short volume fluctuations

PAA is Committed to a Strong Balance Sheet, Enabling Growth / Meeting Customer Needs

- **PAA is committed to Investment Grade credit metrics**
- **Recently announced actions to strengthen balance sheet and reduce leverage, which include:**
  - ✓ **Reset distribution ($1.1B of retained cash flow over next 6 qtrs)**
  - ✓ **Continuing to execute non-core asset sales and strategic joint ventures**
  - ✓ **Plan for preferred equity issuance to fund 2H17 and 2018 capex**
  - ✓ **Reducing short-term debt**

Key Takeaways

- **Long-term view for the crude oil sector is strong**
- **Permian Basin will remain the primary growth driver**
- **Infrastructure is critical to maximizing producer value**
- **PAA’s system is well positioned to service producer needs:**
  - ✓ Flow assurance / operational reliability
  - ✓ Quality management
  - ✓ Access to multiple markets
- **Continuing to invest in our system capabilities**

Q&A