Permit Streamlining Task Force Subcommittee

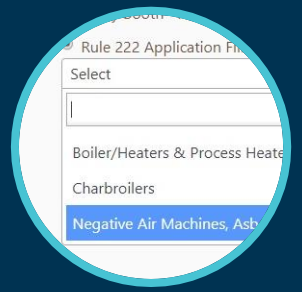
December 16, 2021

Agenda

Pending Application Inventory

Rule 1109.1 Implementation

Pending Permit Application Status Dashboard



Online Tools Development

Other Issues and Public Comment

Pending Application Inventory Update

Resource Update

Staffing

- Hired 13 new Air Quality Engineers in fourth quarter
  - Use of Permit Processing Handbook
- CY 2021 - 13 promotions; three retirements
- Anticipated continued turnover due to pending retirement
- Continuing assessment of staffing needs

Headwinds

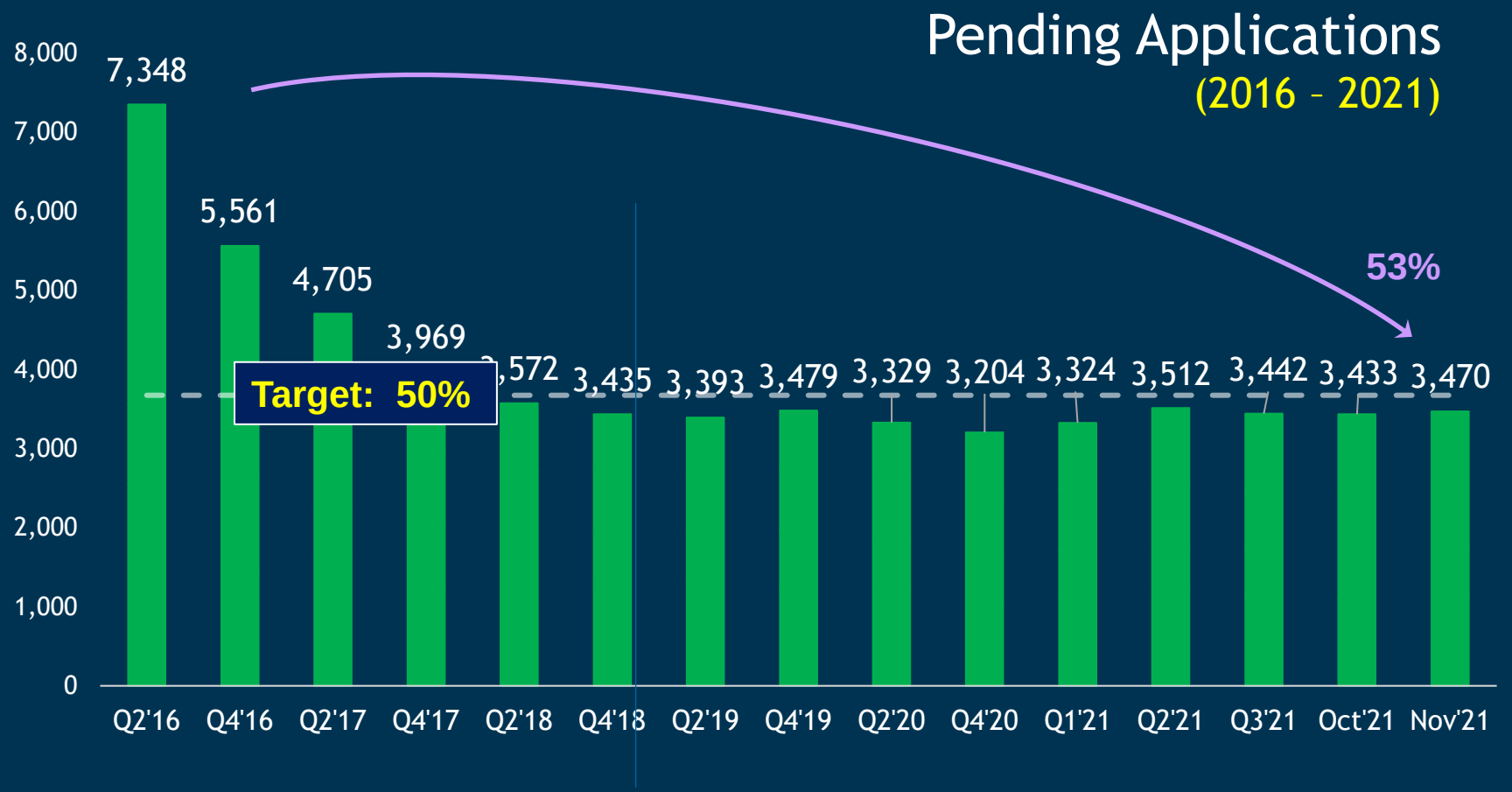
- Continued COVID impacts
- AB617 support
  - Landing rule implementation
  - RECLAIM sunset
  - CERP support
- New Source Review amendment

COVID-19 Impact Update

- Reviewing return to office
- Hybrid meetings
- CPP
- Focus on flexibility

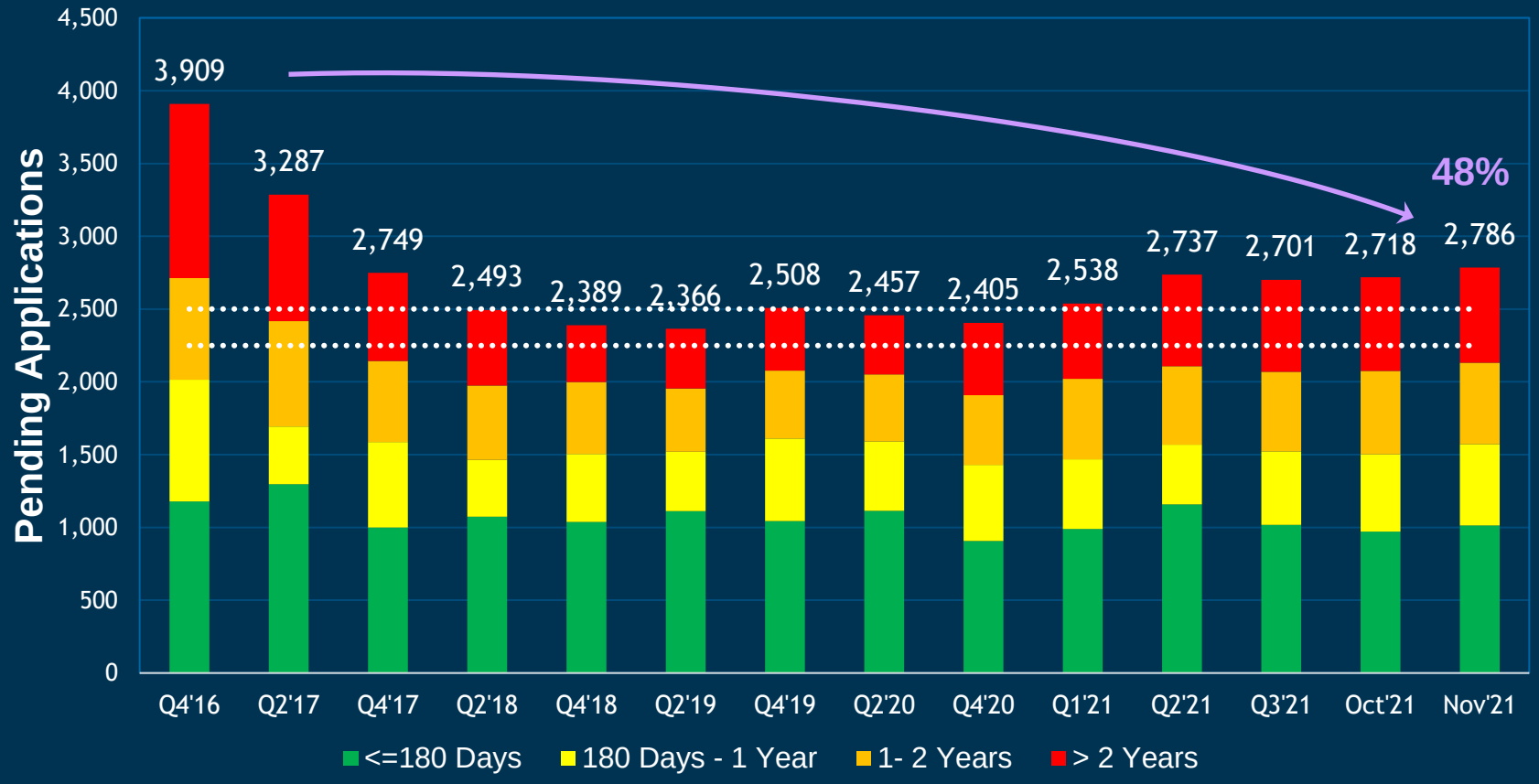
Permit Processing

2016 Inventory Reduction Initiative



Achieved and continue to maintain 50% reduction goal set in 2016

Pending Applications less PCs Issued
(2016 - 2021)



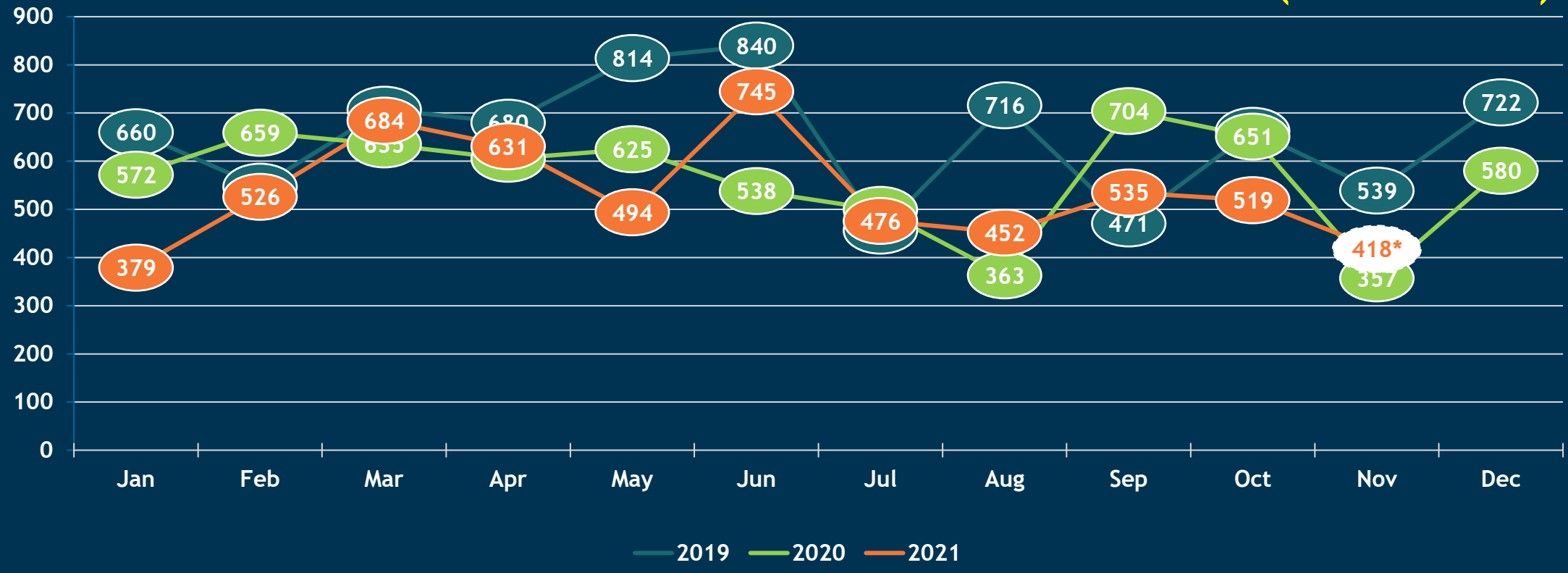
Ongoing Goal

Maintain pending applications without PC issued between 2,250 and 2,500

COVID-19
Permit Application Trends

Permit Activity

Number of Applications Received Per Month (2019 - 2021)

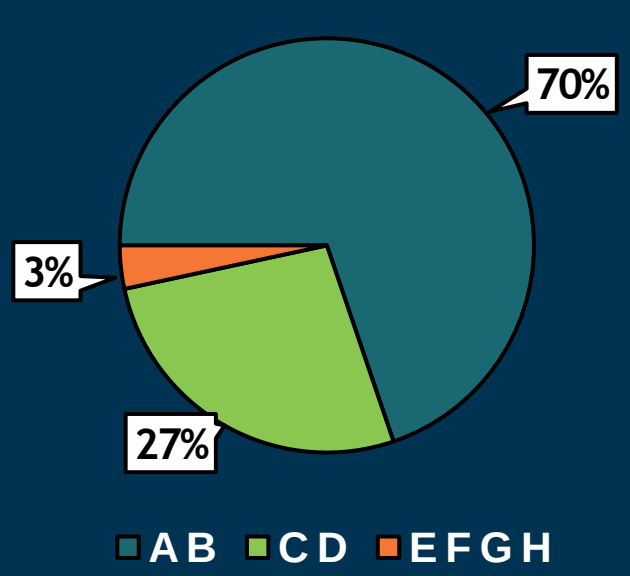


*November Data Preliminary

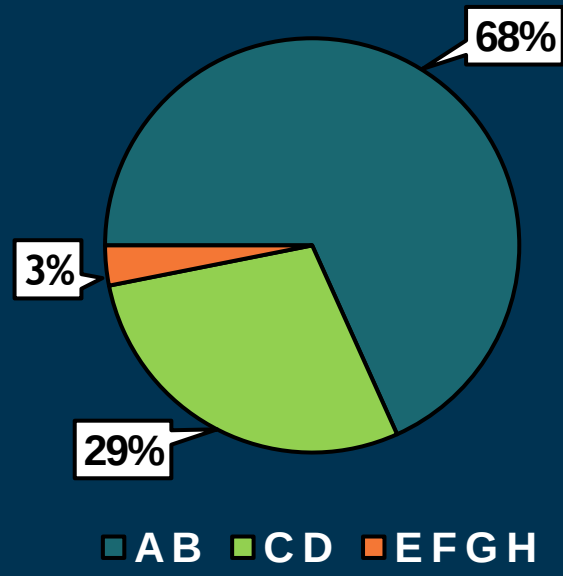
Permit Activity

Equipment Applications Received
(Percent, By Assigned Fee Schedule)

2020 (Jan - Nov)
(2,343 Total)



2021 YTD (Jan - Nov*)
(2,279 Total)

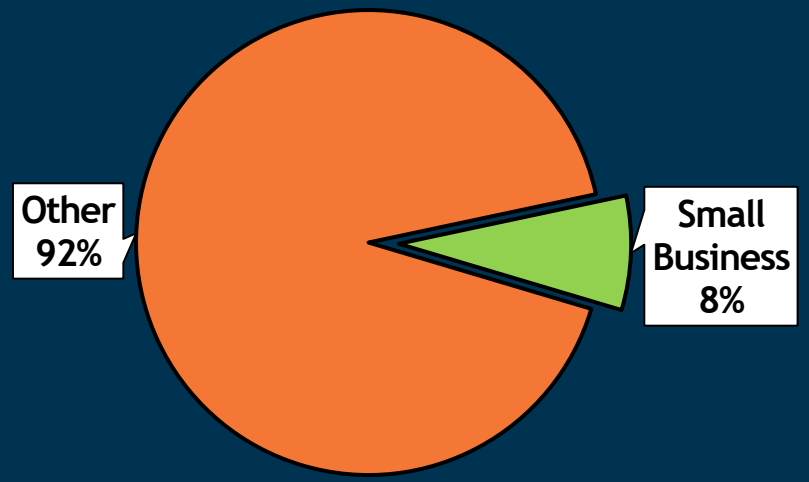


*November 2021 Data Preliminary

Permit Activity

Equipment Applications Received
(Percent, Small Business vs. Others)

2020 (Jan - Nov)
(2,343 Total)



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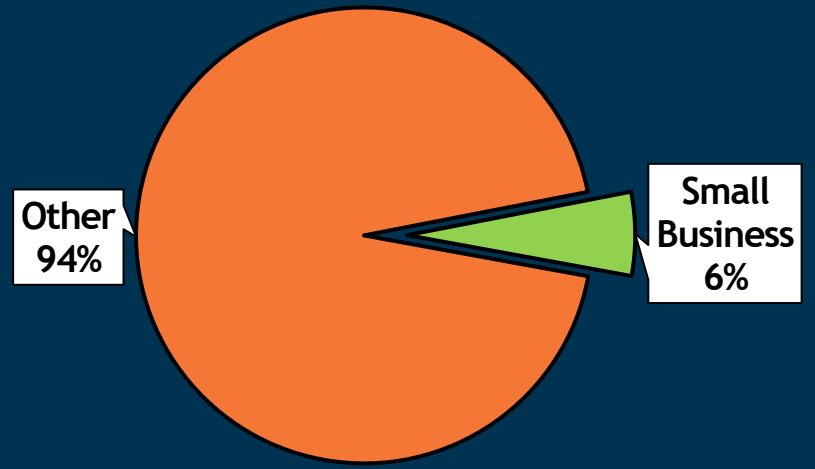
(2,279 Total)

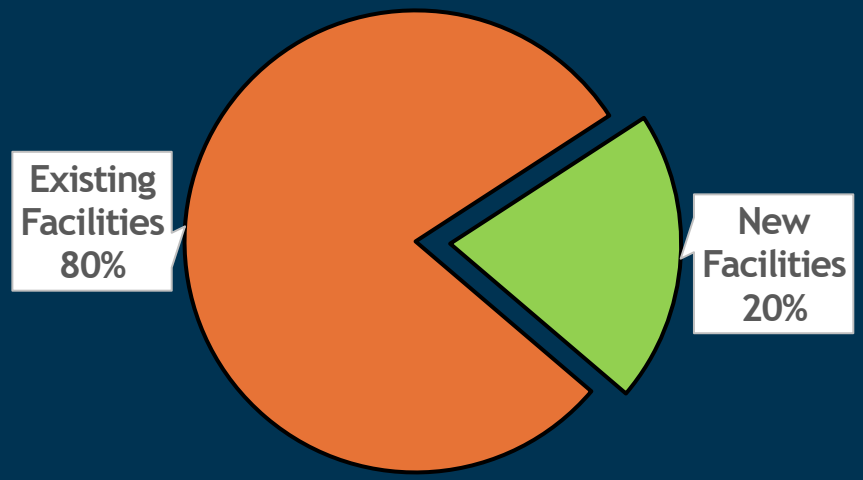


*November 2021 Data Preliminary

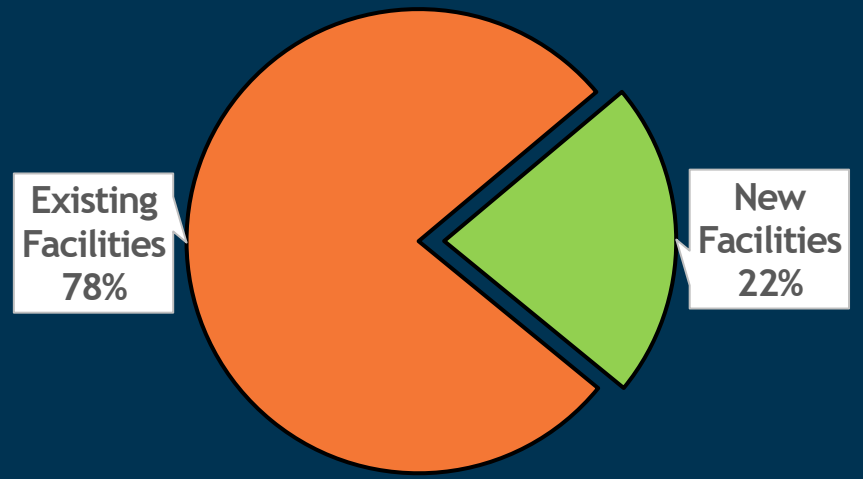
Permit Activity

Equipment Applications Received
(Percent, New vs. Existing Facilities)

2020 (Jan - Nov)
(2,343 Total)



2021 YTD (Jan - Nov*)
(2,279 Total)



*November 2021 Data Preliminary

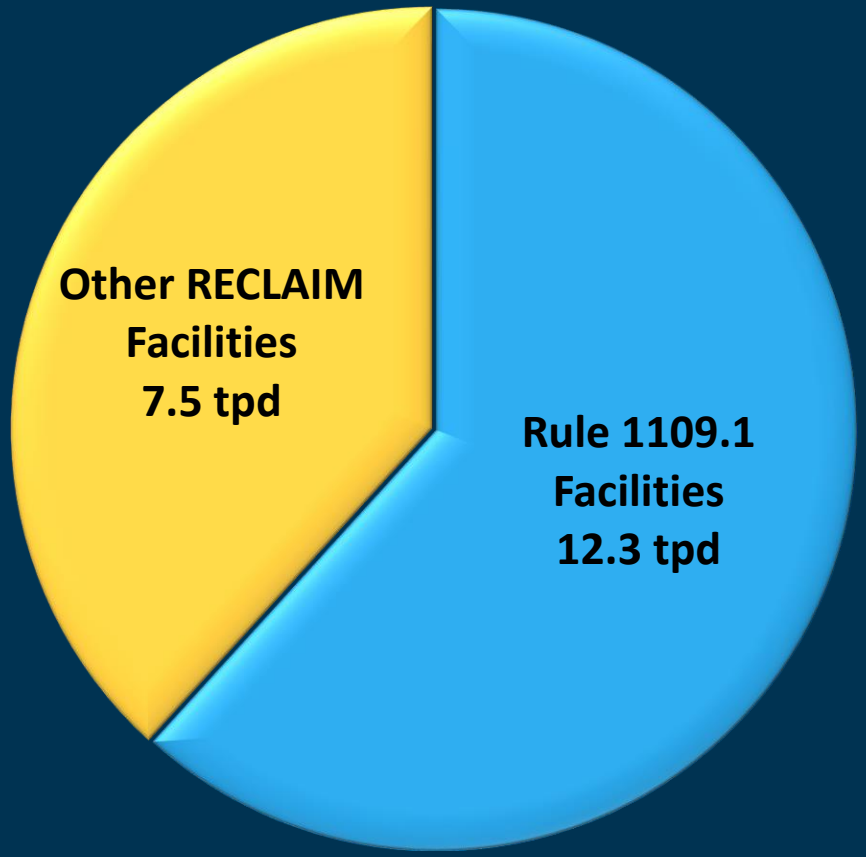
Rule 1109.1 Implementation

Rule 1109.1 Background

- Board adopted Rule 1109.1 on November 5, 2021
- Rule 1109.1 sets BARCT NOx standards for nearly 300 units at refineries and facilities with operations related to refineries
- Unlike RECLAIM, Rule 1109.1 does NOT allow facilities to purchase RECLAIM Trading Credits to meet emission reduction requirements
- Allows for two alternative compliance pathways for facilities with six or more pieces of equipment:
  - B-Plan or B-Cap
- At full implementation, Rule 1109.1 will significantly reduce NOx emissions:
  - 7.7 to 7.9 tons per day (tpd) reduced
  - Approximately 75% of the emission reductions by 2027

Rule 1109.1 - 2017 Baseline Emissions (tpd)

- Rule 1109.1 facilities represent 62% of the NOx emissions in RECLAIM
- NOx Emissions from large boilers and heaters (≥40 MMBtu/hour) represent 57% of the emissions from Rule 1109.1 combustion equipment



2017 RECLAIM NOx Emissions
19.9 tpd

Rule 1109.1 Core Requirements

- Operators must meet NOx limits in Table 1
- If the conditional requirements can be met, operators can meet Table 2 "conditional NOx limits" in lieu of Table 1 limits
- Conditional NOx limits were developed to acknowledge achieving Table 1 NOx limits for some units have:
  - A high cost-effectiveness due to high capital cost and/or low emission reduction potential
- Incorporating the conditional NOx limits reduced the average cost-effectiveness to near or below $50,000/ton NOx reduced for each class and category (BARCT)

TABLE 1: NOx AND CO CONCENTRATION LIMITS

Unit	NOx (ppmv)	CO (ppmv)	O_2 Correction (%)	Rolling Averaging Time[1]
Boilers <40 MMBtu/hour	Pursuant to subparagraphs (d)(2)(A) and (d)(2)(B)	400	3	24-hour
Boilers ≥40 MMBtu/hour	5	400	3	24-hour
FCCU	2	500	3	365-day
	5			7-day
Flares	20	400	3	2-hour
Gas Turbines fueled with Natural Gas	2	130	15	24-hour
Gas Turbines fueled with Gaseous Fuel other than Natural Gas	3	130	15	24-hour
Petroleum Coke Calciner	5	2,000	3	365-day
	10			7-day
Process Heaters <40 MMBtu/hour	Pursuant to su			
Process Heaters ≥40 MMBtu/hour				
SMR Heaters				
SMR Heaters with Gas Turbine				
SRU/TG Incinerators				
Sulfuric Acid Furnaces				
Vapor Incinerators				

TABLE 2: CONDITIONAL NOx AND CO CONCENTRATION LIMITS

Unit	NOx (ppmv)	CO (ppmv)	O_2 Correction (%)	Rolling Averaging Time[1]
Boilers >110 MMBtu/hour	7.5	400	3	24-hour
FCCUs	8	500	3	365-day
	16			7-day
Gas Turbines fueled with Natural Gas	2.5	130	15	24-hour
Process Heaters ≥40 – ≤110 MMBtu/hour	18	400	3	24-hour
Process Heaters >110 MMBtu/hour	22	400	3	24-hour
SMR Heaters	7.5	400	3	24-hour
Vapor Incinerators	40	400	3	24-hour

Rule 1109.1 Implementation Considerations

- Refineries competing for same pool of skilled labor, equipment manufacturers, source testing companies, etc.

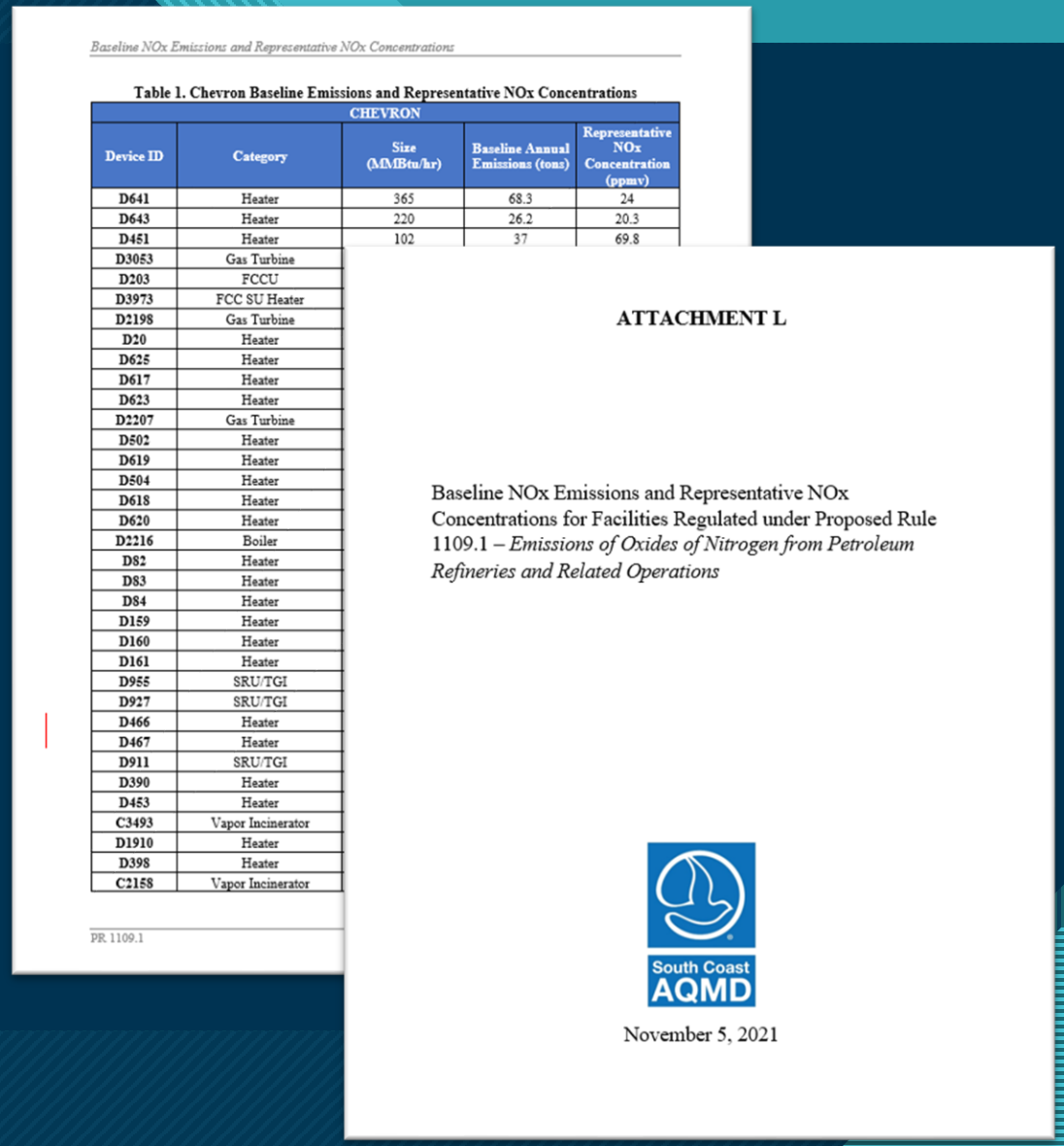
- Integrating projects in refinery turnaround schedules minimizes fuel supply disruptions
- Most turnaround schedules are 3 to 5 years, a few are 9 to 10 years

- ~90 new or upgraded selective catalytic reduction (SCR) projects
- SCR projects customized and require complex engineering
- Challenging to integrate within existing facility structure

- Capital costs for each project $10 to $70 million
- Cost per petroleum refinery ranges from $179 million to $1 billion

Streamlining Plan Review

- Facility Baseline Document
  - To minimize any discrepancies or delays in plan approvals, staff prepared a list of affected equipment and their associated emissions
    - Data was reviewed, verified, and agreed upon by facilities
    - List was approved by Board as part of Resolution on November 5, 2021
    - Facilities have 30 days from approval to request a change to any value
- To assist facilities in developing the compliance plans, staff is developing a guidance document
  - Will ensure uniformity and streamline the review and approval process



Baseline NOx Emissions and Representative NOx Concentrations

Table 1. Chevron Baseline Emissions and Representative NOx Concentrations

CHEVRON				
Device ID	Category	Size (MMBtu/hr)	Baseline Annual Emissions (tons)	Representative NOx Concentration (ppmv)
D641	Heater	365	68.3	24
D643	Heater	220	26.2	20.3
D451	Heater	102	37	69.8
D3053	Gas Turbine			
D203	FCCU			
D3973	FCC SU Heater			
D2198	Gas Turbine			
D20	Heater			
D625	Heater			
D617	Heater			
D623	Heater			
D2207	Gas Turbine			
D502	Heater			
D619	Heater			
D504	Heater			
D618	Heater			
D620	Heater			
D2216	Boiler			
D82	Heater			
D83	Heater			
D84	Heater			
D159	Heater			
D160	Heater			
D161	Heater			
D955	SRU/TGI			
D927	SRU/TGI			
D466	Heater			
D467	Heater			
D911	SRU/TGI			
D390	Heater			
D453	Heater			
C3493	Vapor Incinerator			
D1910	Heater			
D398	Heater			
C2158	Vapor Incinerator			

PR 1109.1

ATTACHMENT L

Baseline NOx Emissions and Representative NOx Concentrations for Facilities Regulated under Proposed Rule 1109.1 – *Emissions of Oxides of Nitrogen from Petroleum Refineries and Related Operations*

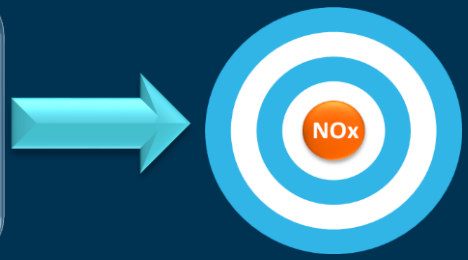
South Coast AQMD

November 5, 2021

B-Plan and B-CAP Emission Target Overview

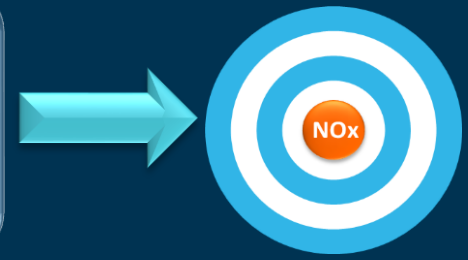
B-Plan

Aggregate NOx concentration limits must meet Emission Target



B-Cap

Facility-wide emissions must meet Emission Target + 10% Environmental Benefit



+ 10%

Emission Targets for all facilities based on NOx limits in Table 1 and Table 2

B-Plan and B-Cap are designed to achieve Facility-Specific Emission Targets that are Based on Table 1 and Table 2 NOx Limits

BARCT Equivalent Plan (B-Plan) and BARCT Equivalent Mass Cap Plan (B-Cap) Overview

- The B-Plan and B-Cap would be implemented through the schedule in an approved I-Plan
- B-Plan and B-Cap provides options to achieve BARCT in the aggregate
- Both alternative compliance options requires each unit to have an enforceable permit limit

- B-Plan is a BARCT equivalent *concentration* plan
- Allows operators to select a NOx concentration limits that are equivalent BARCT in aggregate

- B-Cap is a BARCT equivalent *mass* cap
- Requires operators to accept a NOx emission limit for each unit
- Allows facilities to take credit for equipment shutdowns and throughput reductions

Implementation Plan (I-Plan) Overview

- I-Plan is a phased implementation schedule
- Allows operators to tailor the implementation schedule to meet NOx limits to minimize operational disruptions

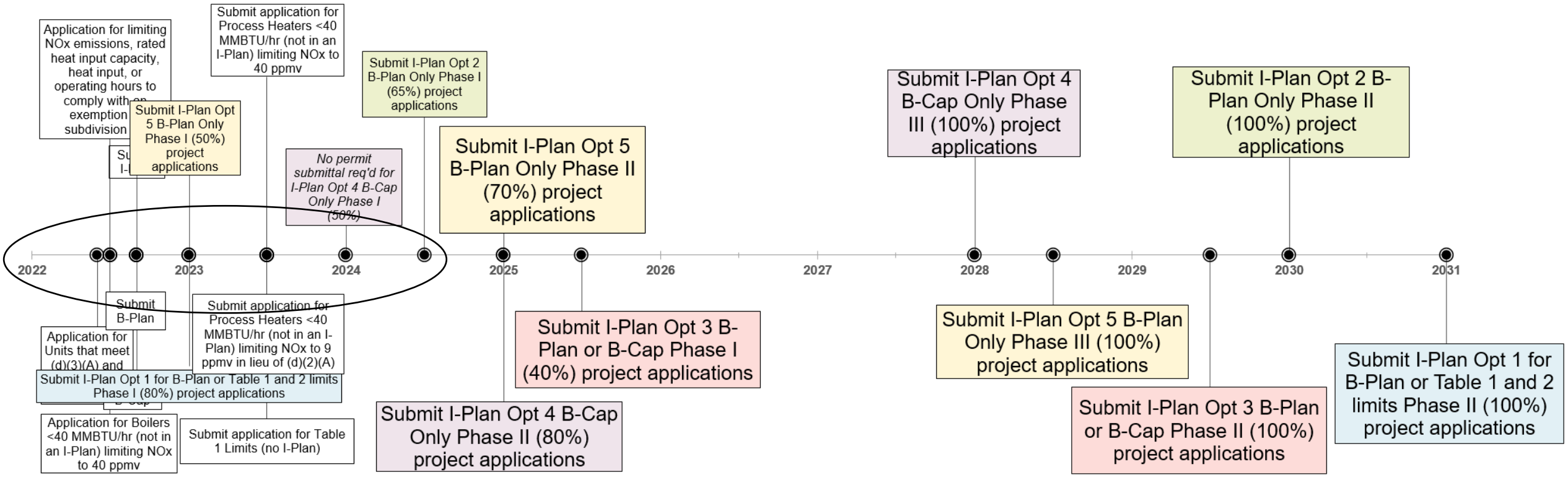
I-Plan Options	Provision	Phase I	Phase II	Phase III
Option 1 for B-Plan or Table 1 or 2	Targets	80%	100%	
	Submit Permit Application	Jan 1, 2023	Jan 1, 2031	
Option 2 B-Plan	Targets	65%	100%	
	Submit Permit Application	July 1, 2024	Jan 1, 2030	
Option 3 B-Plan or B-Cap	Targets	40%	100%	
	Submit Permit Application	July 1, 2025	July 1, 2029	
Option 4 B-Cap Only	Targets	50%	80%	100%
	Submit Permit Application	Jan 1, 2024 (*Effective Date*)	Jan 1, 2025	Jan 1, 2028
Option 5 for B-Plan or Table 1 or 2	Targets	50%	70%	100%
	Submit Permit Application	Jan 1, 2023	Jan 1, 2025	July 1, 2028

Streamlining Plan Review

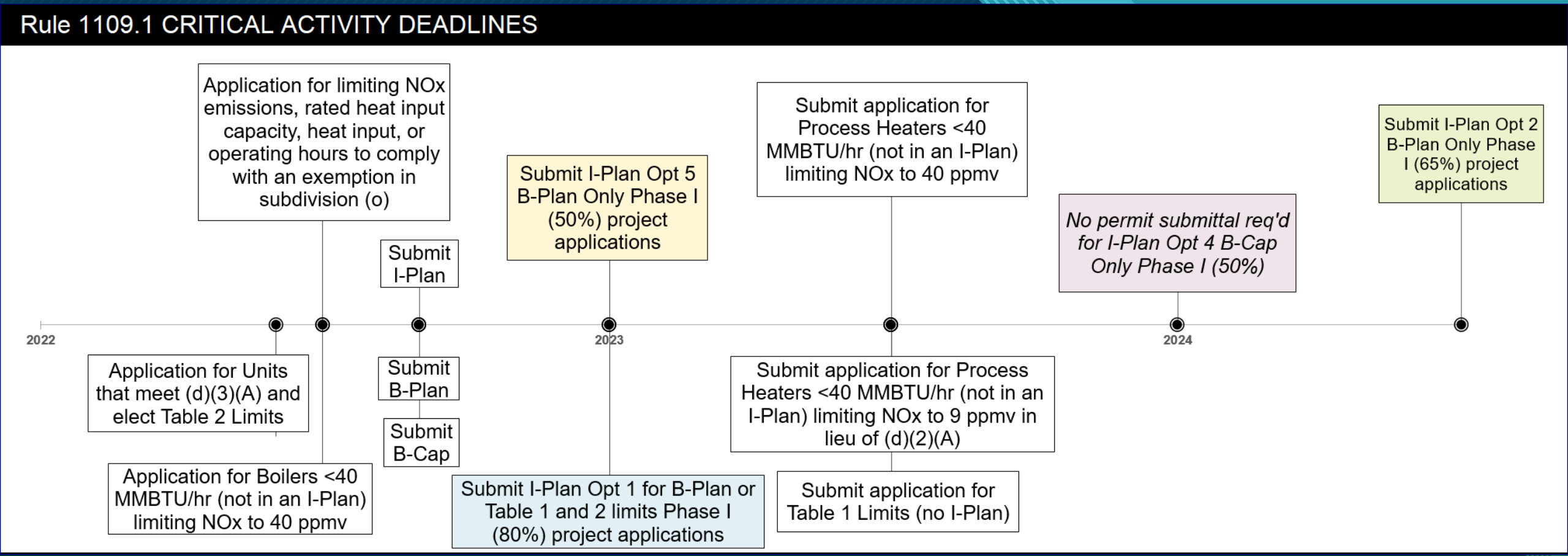
- Planning staff will review I-Plan, B-Plan, and B-Cap
  - During Rule 1109.1 development, Planning staff met with each facility to discuss the affected equipment, potential implementation schedule and compliance plans
  - Spreadsheet with emission data for each unit subject to Rule 1109.1 was sent to each facility
    - Facilities used data to determine a feasible implementation schedule
  - Planning staff will work with each facility as they develop their plan submissions
  - Plan requirements inserted into permit by E&P and will be made available to the public on the South Coast AQMD website 30 days prior to approval
    - Inquiries handled by planning staff

Rule 1109.1 Applications Overall Timeline

Rule 1109.1 CRITICAL ACTIVITY DEADLINES



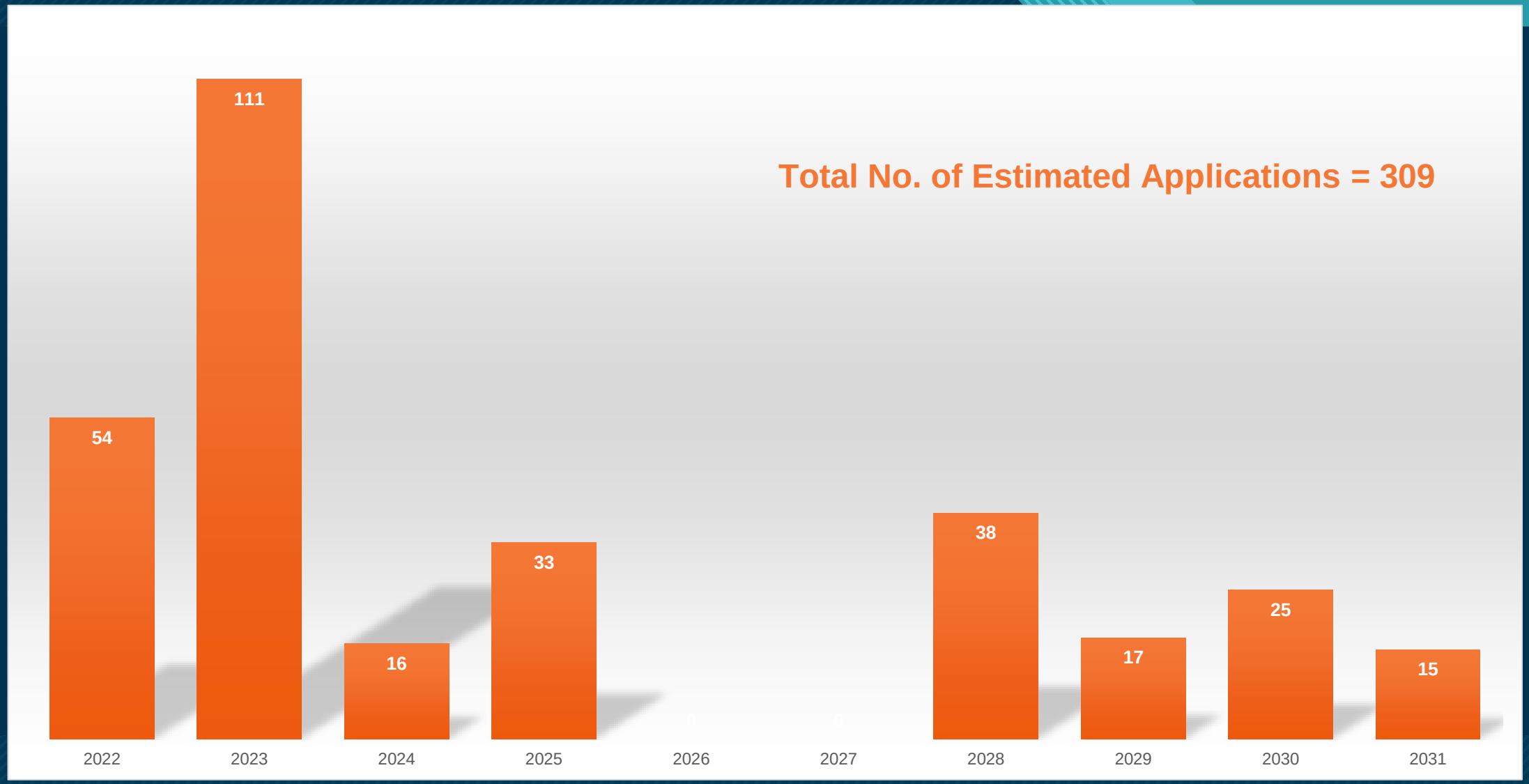
Rule 1109.1 Applications Timeline - First 3-Years (2022-24)



Estimated Number of R1109.1 Applications to be Submitted

Category	Application Submittal Deadline	Plans	Applications other than Table 1 or 2	Applications for Table 1 I-Plan	Applications for Table 2 conditional limits in I-Plan
Potential Conditional Limits	June 1, 2022		30		
Boilers < 40 mmbtu to 40 ppmv	July 1, 2022		4		
Exempt Units	July 1, 2022		9		
B-Plan	September 1, 2022	3			
B-Cap	September 1, 2022	2			
I-Plan	September 1, 2022	6			
I-Plan option 5 phase I	January 1, 2023			15	
I-Plan option 1 phase I	January 1, 2023			21	
Heaters < 40 mmbtu to 40 ppmv	July 1, 2023		64		
Submit applications for Table 1 limits with no I-Plan	July 1, 2023			2	3
Submit applications for Table 1 limits with no I-Plan	July 1, 2023			6	
I-Plan option 4 phase I	January 1, 2024				
I-Plan option 2 phase I	July 1, 2024			16	
I-Plan option 5 phase II	January 1, 2025			6	
I-Plan option 4 phase II	January 1, 2025			10	10
I-Plan option 3 phase I	July 1, 2025			7	
I-Plan option 4 phase III	January 1, 2028		1	6	13
I-Plan option 5 phase III	July 1, 2028		5	8	5
I-Plan option 3 phase II	July 1, 2029		1	7	9
I-Plan option 2 phase II	January 1, 2030		9	8	8
I-Plan option 1 phase II	January 1, 2031		1	4	10

Estimated Number of R1109.1 Applications by Year



Implementation Overview

Milestones / Approach

- Plan review by PRDAS
- Outreach to all refineries
- Quarterly Updates to Stationary Source Committee (starting Q3-2022)
  - Status of applications submittal and approvals relative to rule requirements
  - Steps taken to avoid deadline extensions
  - Turnaround needs
  - Other stakeholder points of interest

Streamline by Design

- Streamlining through rulemaking
- Address CEQA impacts through rule development
- Limited BACT exemption
- Estimated timelines for approvals driven by R1109.1 universe

Additional Streamlining Considerations

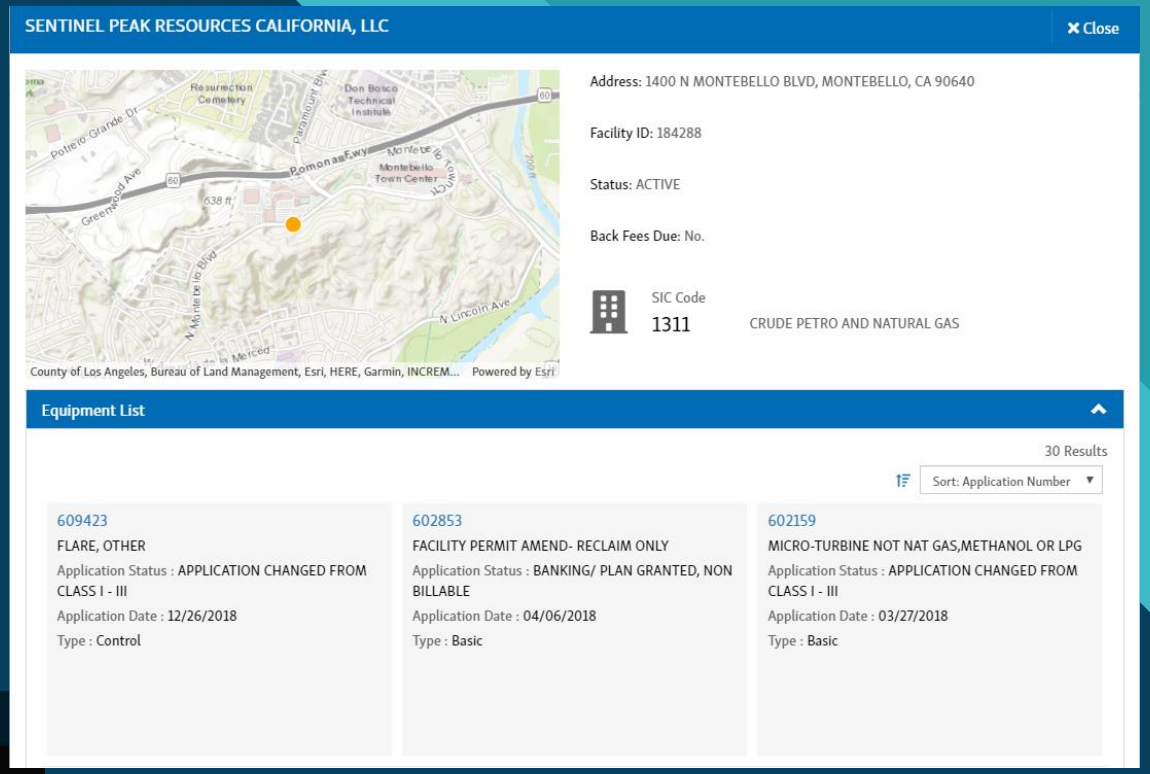
- Application Checklists
  - B-Plan, B-Cap and I-Plans
  - SCR applications
  - Burner replacement applications
- Statement of basis streamlining and development of templates for routine applications
- Minimize scope creep for Rule 1109.1 applications
  - Adding other modification to Rule 1109.1 applications (e.g. increase in firing rate)
  - Modifications that may trigger LAER

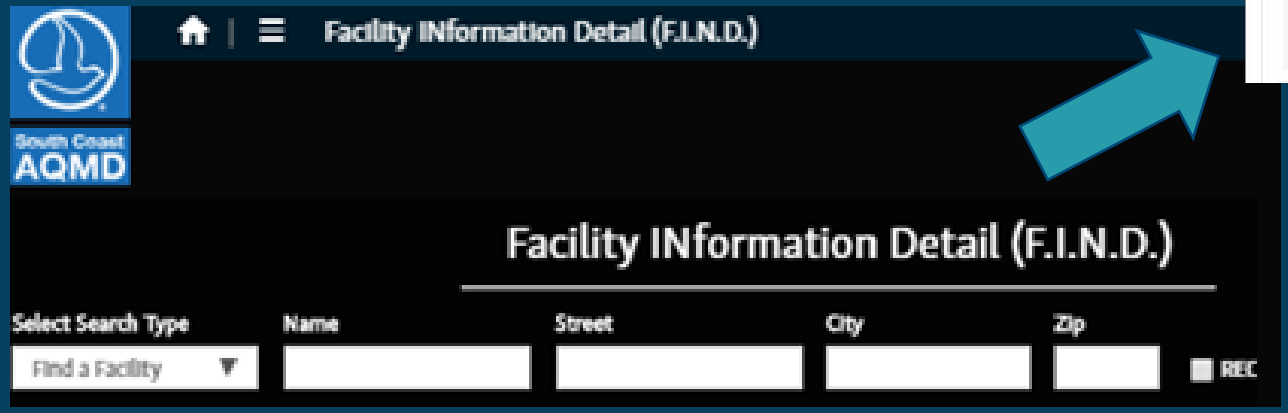
Pending Permit Application Status Dashboard Update

Pending Permit Application Status Dashboard

Board initiative to increase transparency

- Online ability to view status of individual applications
- Integrate with existing F.I.N.D. application

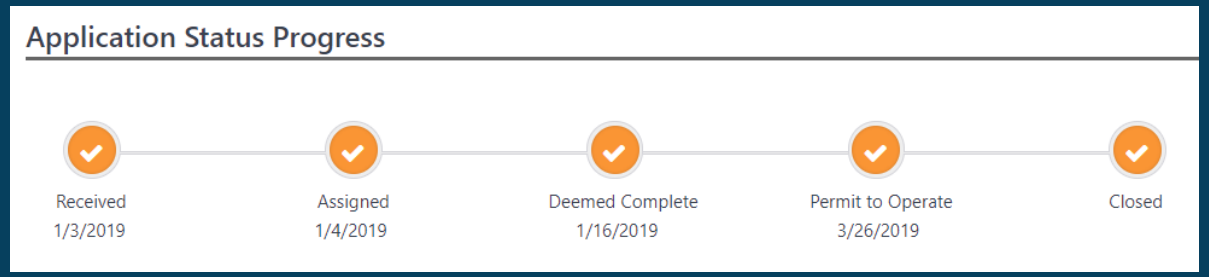


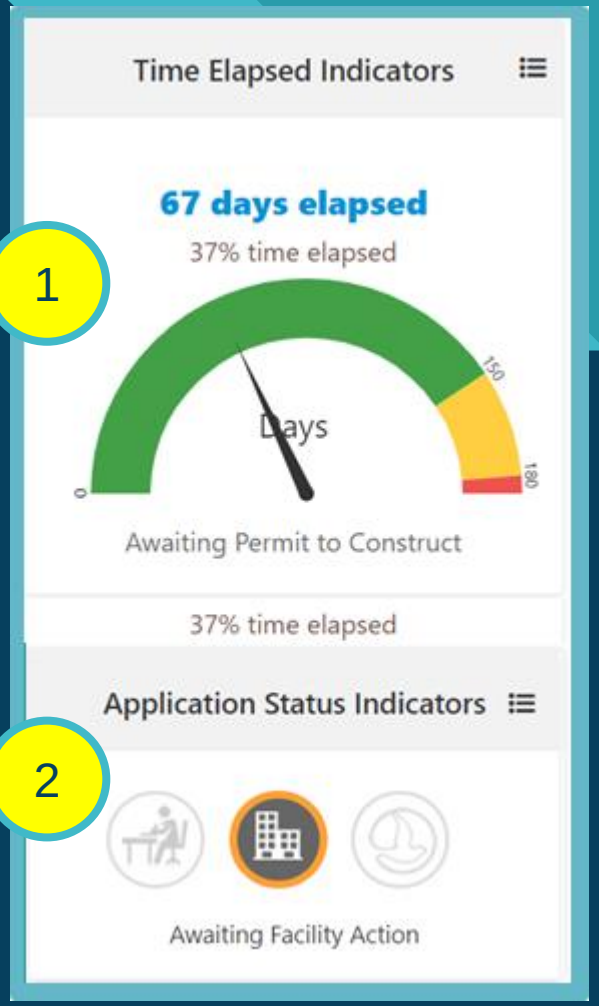


F.I.N.D. https://xappprod.aqmd.gov/find

Dashboard Status Indicators

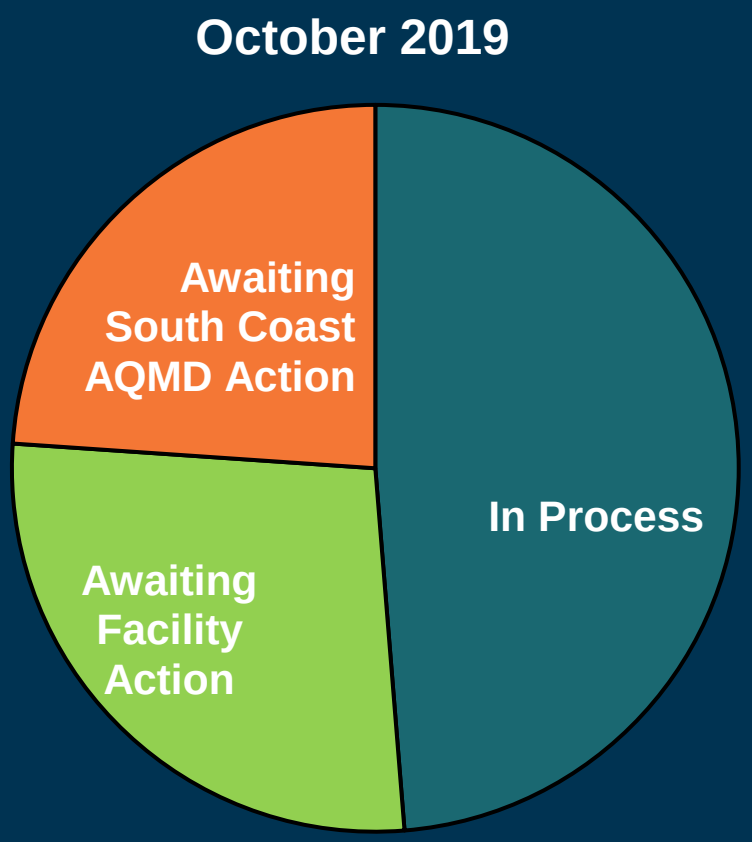
- Two status indicator types:
  1. Time elapsed indicator
  2. Application status indicators
- Status progress bar:

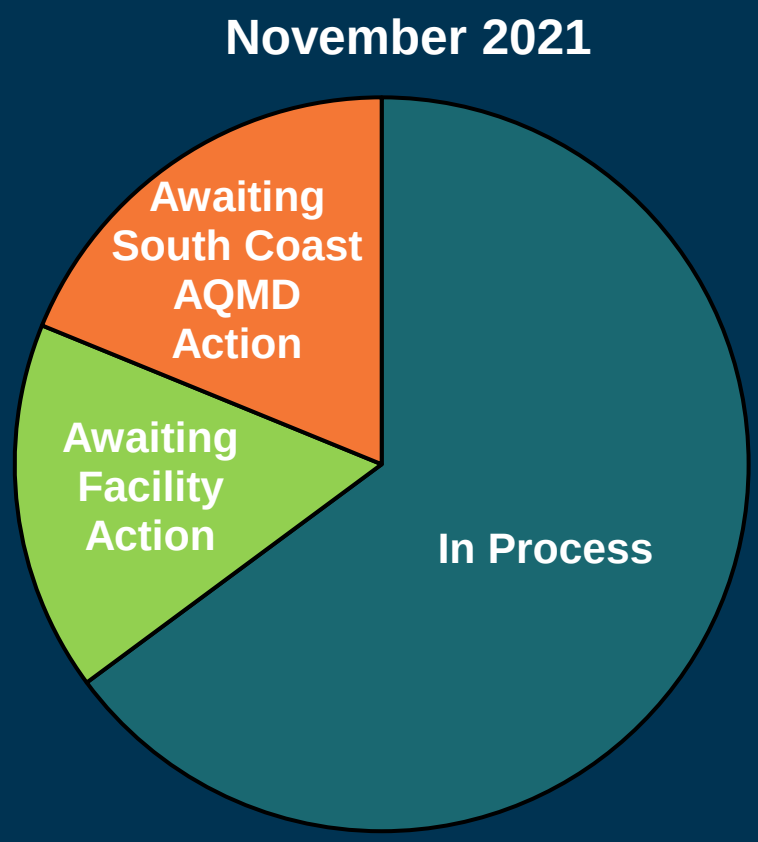




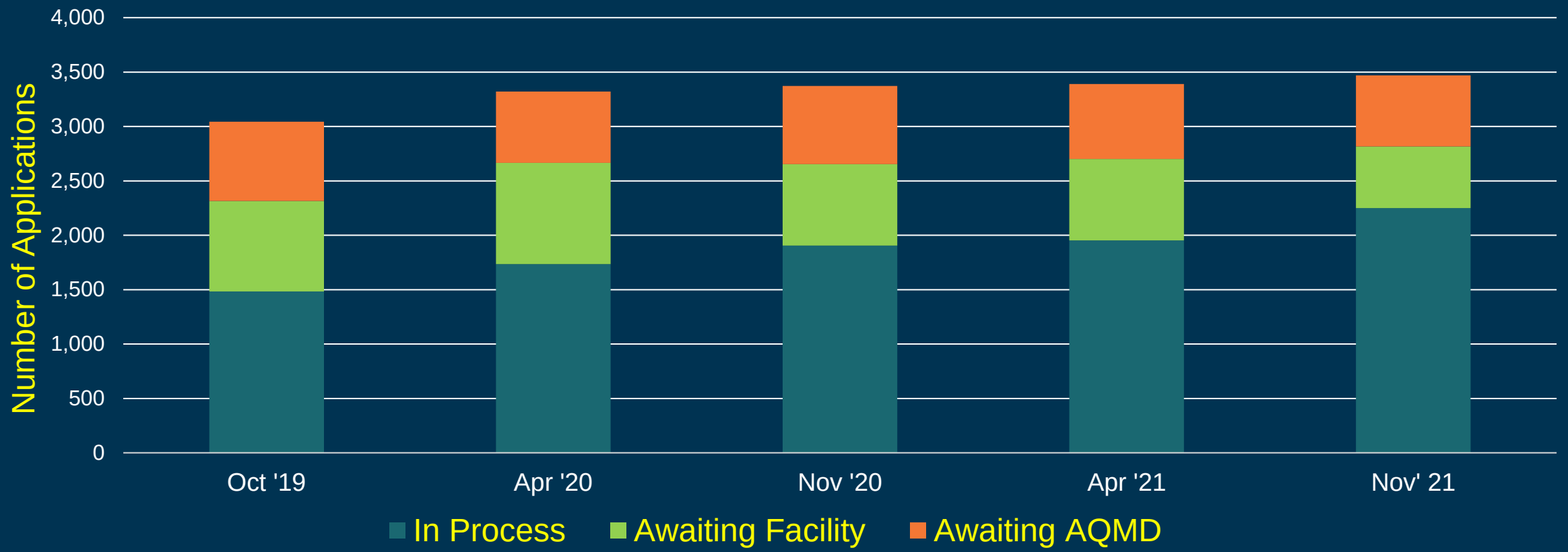
Pending Permit Application Status Dashboard

Debottlenecking Efforts





Dashboard Pending Action Trends



Pending Application Status Dashboard

Initial Observations - Snapshot (October 2019, cont.)

Completeness Determ. (Facility Action)		In Process		Awaiting Facility Action		Awaiting South Coast AQMD Action	
Add. Info. (A/I) Req	14%	Engineering Evaluation and Administrative Processing	41%	Compliance	5%	Supv/Mgr Review	7%
Related App A/I	1%			Review Draft	1%	Related App Proc.	5%
Fee Resolution	< 1%			Public Notice Distr.	< 1%	Source Test Review	4%
						Policy Review	3%
				Conduct Source Test	6%	Field Eval	3%
				Awaiting Constr.	3%	Other Agency Rev.	1%
						Public Notice	1%
						HRA / Modeling	< 1%

Pending Permit Application Status Dashboard

November 2021 Snapshot

Completeness Determ. (Facility Action)		In Process		Awaiting Facility Action		Awaiting South Coast AQMD Action	
A/I Req.	7%	Engineering Evaluation and Administrative Processing	65%	Compliance Review Draft	< 1%	Supv/Mgr Review	9%
Related App A/I	1%				1%	Related App Proc.	3%
						Source Test Review	3%
				Conduct Source Test	3%	Policy Review	1%
				Awaiting Constr.	4%	Field Eval	< 1%
						Other Agency Rev.	1%
						Public Notice	< 1%

Continued progress on lowering apps awaiting actions

Pending Permit Application Status Dashboard
November 2021 Snapshot (cont.)

Awaiting action categories with longest average processing time:

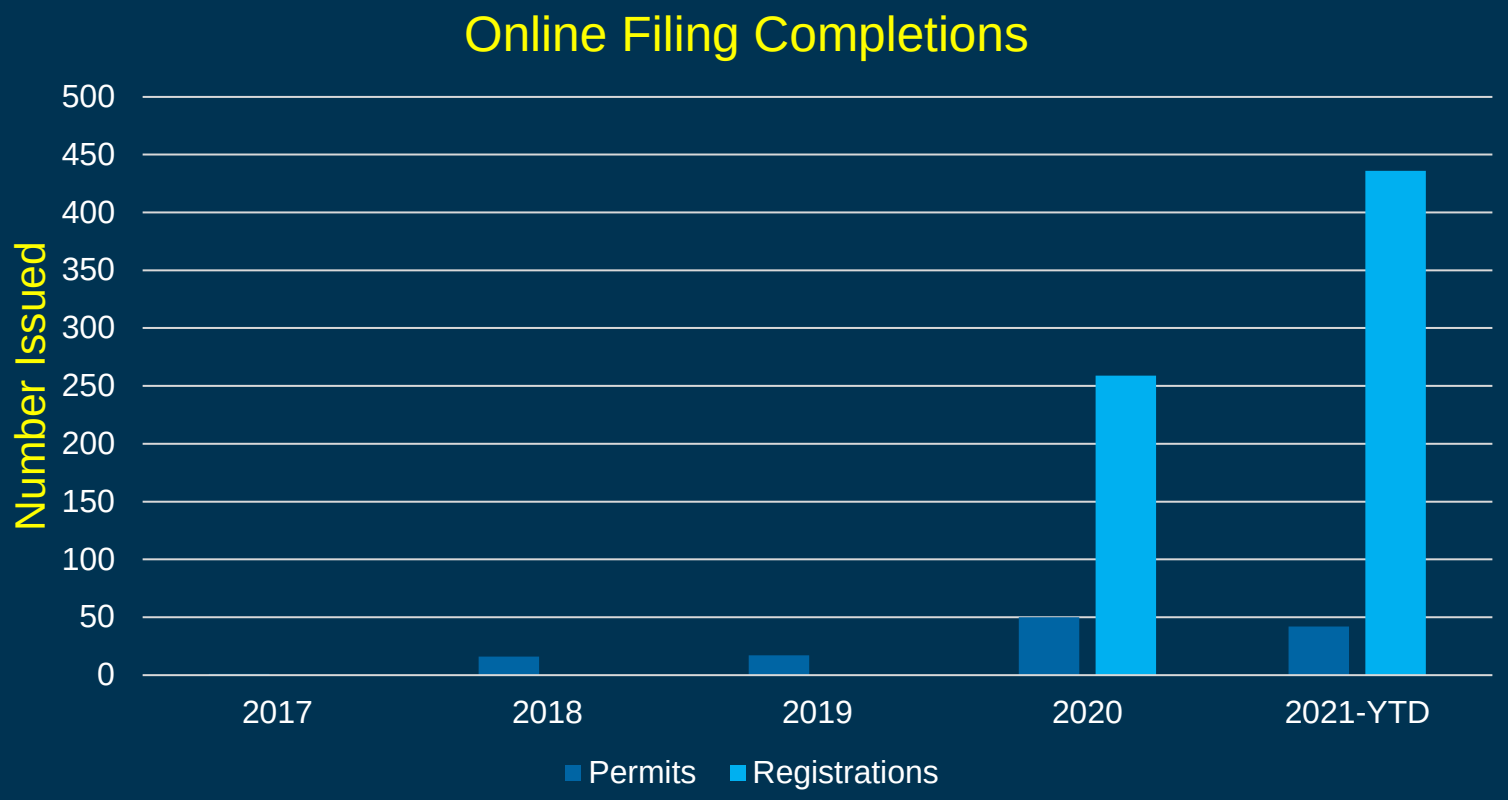
- Awaiting SCAQMD
  - Policy Decision (31 apps)
  - Source Test Results Review (118)
  - Field Evaluation (18)
  - Related Applications Processing (106)
  - BACT/LAER Determination (2)
- Awaiting Facility
  - Awaiting Construction (153 apps)
  - Conduct Source Testing (89 apps)
- In Process
  - CEQA Analysis (26)

Online Filing Update

Online Rule 222 Registration

- Three main registered equipment types
  - 222-A, Negative Air Machines (Asbestos)
  - 222-B, Boilers (1-2 mmbtu/hr)
  - 222-C, Commercial Charbroilers
- Represents ~ 80% of R222 Registrations
- Online Filing and Issuance
- Testing Complete – Release Pending
  - 222-CT, Cooling Towers
  - 222-TP, Tar Pots
  - 222-PW, Pressure Washers

Online Filing Activity



- ~80% of R222 are for Negative Air Machine, balance is Charbroiler and Boiler
- Rule 1403 Online Filing and R222 Negative Air Machine Online Filing work in tandem
- Testing complete on three additional R222 modules

Development

- Occasional software releases for data cleanup/program improvements
- Necessary to keep online programs consistent with rule changes
- Additional R222 Modules in testing stage
- Emergency IC Engine registration permit module in review
  - Online filing limited to certified engines with prescribed conditions
  - Seeking external volunteers to test module
- Workflow updates
  - IM to initiate building of individual modules

Source Test Portal Update

- Released November 2021 internally for testing by multiple divisions
  - Incoming and routing of source tests and protocols
  - Electronic review and approval
  - Electronic communication and status / dashboard functionality
  - Online form processing (ST-1 / ST-2)
- Reiterative testing to continue

Other Business

Public Comment