

# PSD / Nonattainment Review / Netting Basics

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Environmental Trade Fair 2019



# Terms and Abbreviations

Major Source (MS)

Potential to Emit (PTE)

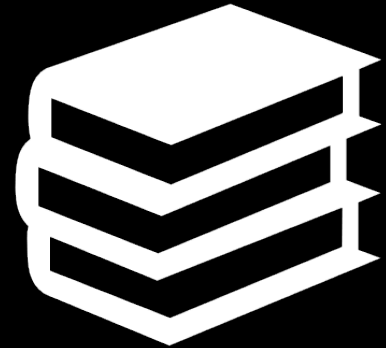
Baseline Actual Emissions (BAE)

Project Increase (PI)

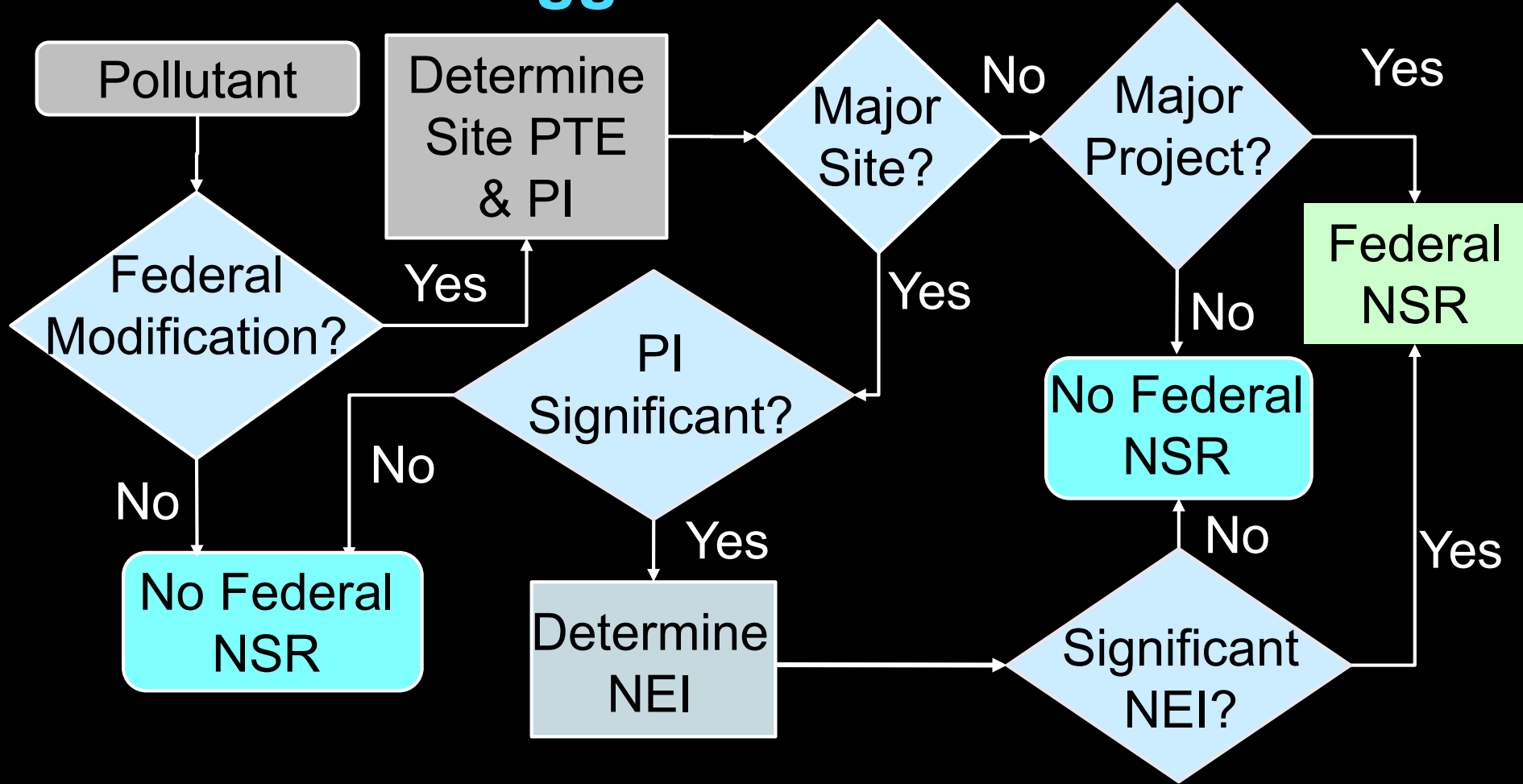
Net Emissions Increase (NEI)

Major Modification (MM)

Major Modification Threshold = Significant Emission Rate (SER)



# What Triggers Federal Review?



# PSD

Attainment or Undetermined Areas

Major Source thresholds

Named Sources

100 tpy (including fugitives)

Unnamed sources

250 tpy (fugitives not included)

Major for one pollutant, Major for all pollutants

BACT

**Bexar County**

**City of El Paso**

***Dallas/Fort Worth (DFW):***  
Collin, Dallas, Denton, Ellis, Johnson,  
Kaufman, Parker, Rockwall, Tarrant, and Wise  
Counties

***Portions of:***

**Titus County**

**Panola County**

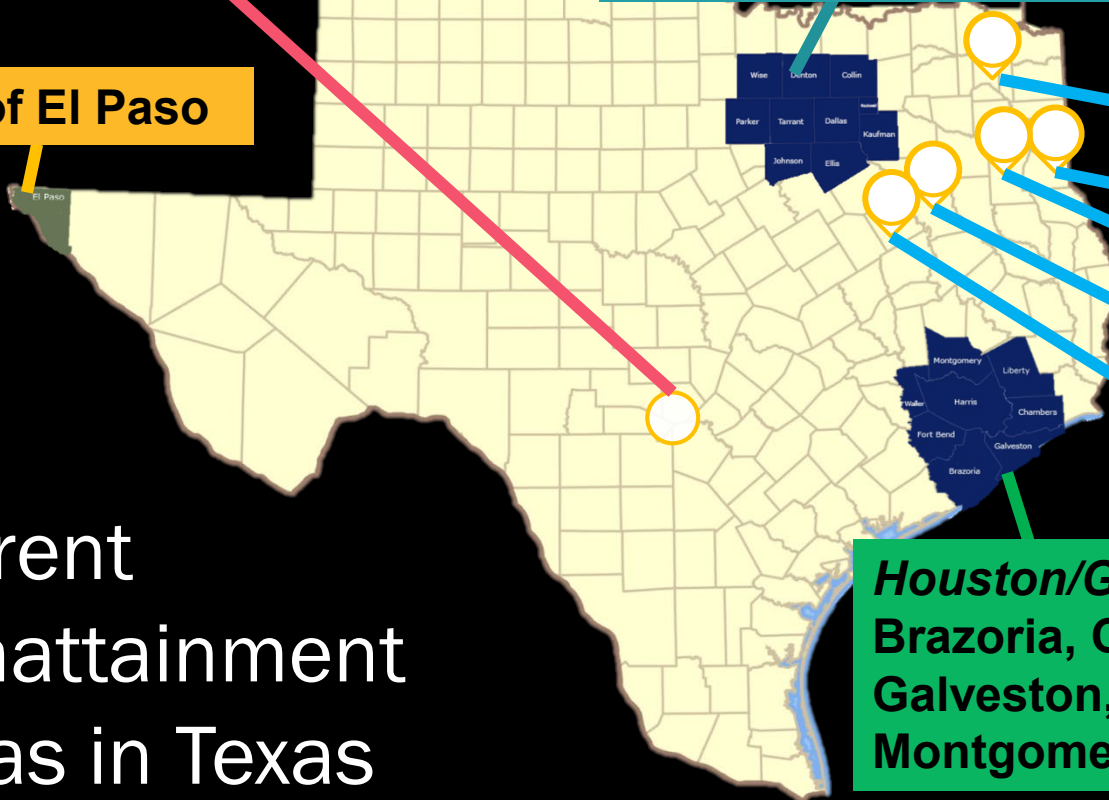
**Rusk County**

**Anderson County**

**Freestone County**

***Houston/Galveston/Brazoria (HGB):***  
Brazoria, Chambers, Fort Bend,  
Galveston, Harris, Liberty,  
Montgomery, and Waller Counties

**Current  
Nonattainment  
Areas in Texas**



# Ozone Nonattainment

Regulated through precursors (VOC and NOx)

Classification	Major Source (tpy)	Major Modification (tpy)	Netting (tpy)
Marginal (Bexar County)	100	40	40
Moderate (HGB and DFW)	100	40	40
Serious	50	25	5
Severe	25	25	5
Extreme	10	10	--

# Other Texas Nonattainment Areas

Pollutant Designation	Major Source (tpy)	Major Modification (tpy)	Netting (tpy)
<b>Moderate for PM<sub>10</sub></b> (City of El Paso)	100	15	15
<b>Nonattainment for SO<sub>2</sub></b> (Portions of Titus, Rusk, Panola, Anderson and Freestone Counties)	100	40	40

# Nonattainment Offset Ratios

Classification	Offset Ratio
<b>Marginal Ozone</b> (Bexar County)	1.1 to 1
<b>Moderate Ozone</b> (HGB and DFW)	1.15 to 1
<b>Serious Ozone</b>	1.2 to 1
<b>Severe Ozone</b>	1.3 to 1
<b>Extreme Ozone</b>	1.5 to 1
<b>PM<sub>10</sub> Moderate</b> (City of El Paso)	1:1
<b>SO<sub>2</sub> Nonattainment</b> (Portions of Anderson, Titus, Rusk, Panola, Freestone Counties)	1:1



# PSD and Nonattainment: Similarities

Determination of sitewide PTE, BAE, PI

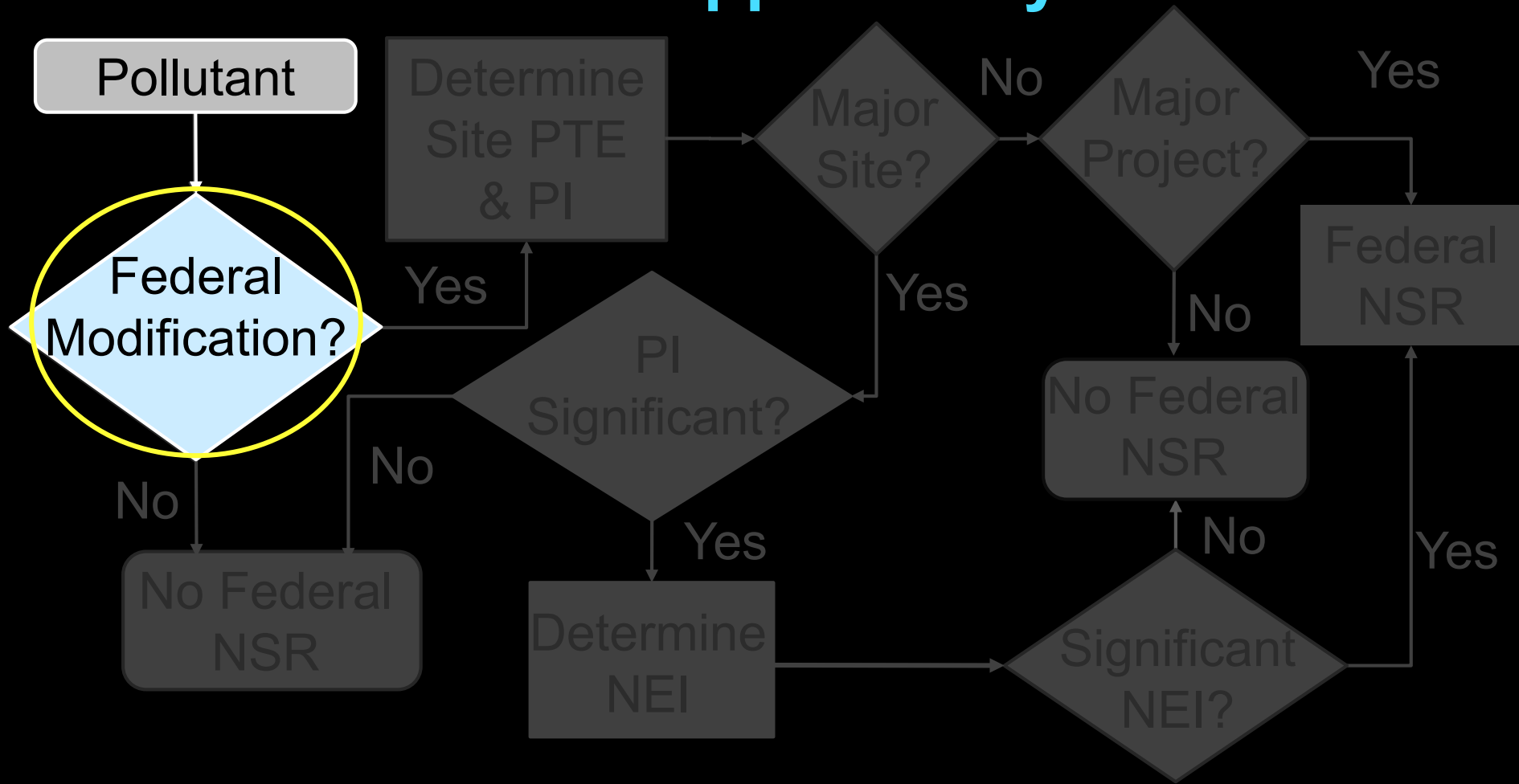
Contemporaneous netting window

Notice to EPA / Opportunity to Comment

Review of RBLC

Expanded review includes modeling protocol and Preliminary Determination Summary

# Federal Review Applicability Flowchart



# Modification

Physical change

Change in method of operation

Causes increase in emissions

Does not need to be physically “touched”

# Major Modification

Modification that causes both a significant emissions increase and a significant net emissions increase

40 CFR §52.21(a)(2)(iv)(a)

Significant emissions increase:  $PI \geq \text{netting threshold/SER}$

1

Significant net emissions increase:  $NEI \geq \text{MM threshold/SER}$

2

# Affected Facility

No allowable emission increases

Increases in actual emissions which are caused by a change or modification elsewhere

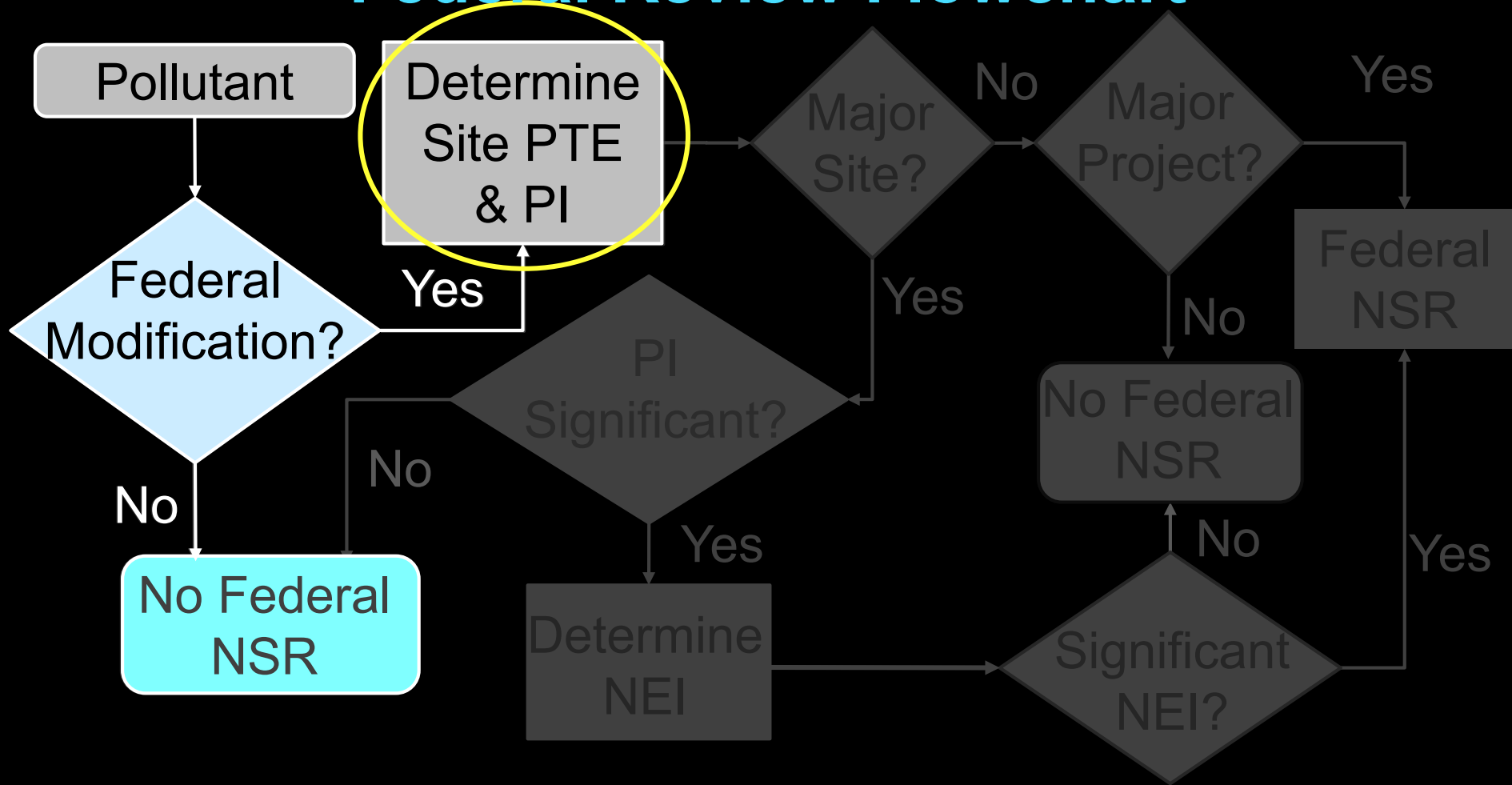
Included in project increase and netting

Evaluated  $PI = PTE - BAE$

Example:

- New process requiring steam from an existing onsite boiler, but boiler allowable emission rates will not increase.

# Federal Review Flowchart



# Sitewide PTE

Includes all emissions at the site  
Routine & MSS

case-by-case NSR permits

PBRs and Standard Permit Registrations

Unregistered PBRs

Standard Exemptions

# Table 1F

	Pollutants							
	Ozone		CO	PM <sub>10</sub>	PM <sub>2.5</sub>	NOx	SO <sub>2</sub>	Other
	VOC	NOx						
Existing Site PTE (tpy)	#	#	#	#	#	#	#	#

List the existing sitewide PTE for each pollutant on Table 1F





# Baseline Actual Emissions (BAE)

Emissions, in tons/year, actually emitted during a consecutive 24-month period out of the previous 10 years (previous 5 years for electric utilities) from the date the application is administratively complete.

- All sources of single pollutant have same 24-month period for a given project.
- Different pollutants may have a different 24-month period.
- Exclude non-compliant emissions and emissions exceeding current limitations.

# Example: BAE Determination

For each applicable pollutant for a given project:

FIN	EPN	2014	2015	2016	2017	2018
Tank1	Tank1Vent	14.70	12.70	13.30	12.30	14.60
Tank2	Tank2Vent	16.30	14.20	10.30	14.90	15.00
Heater	HeaterVent	9.80	7.10	6.50	9.20	8.30
	<b>Totals</b>	40.80	34.00	30.10	36.40	37.90

2014-2015 average: 37.40

2015-2016 average: 32.05

2016-2017 average: 33.25

2017-2018 average: 37.15

baseline period can  
extend back 10 years

# Project Increase (PI)

PI = Proposed PTE - BAE

Increases only

Provide Table 2F for each pollutant

Summarize results on Table 1F

PI = Proposed PTE- Current PTE  
**only if:**

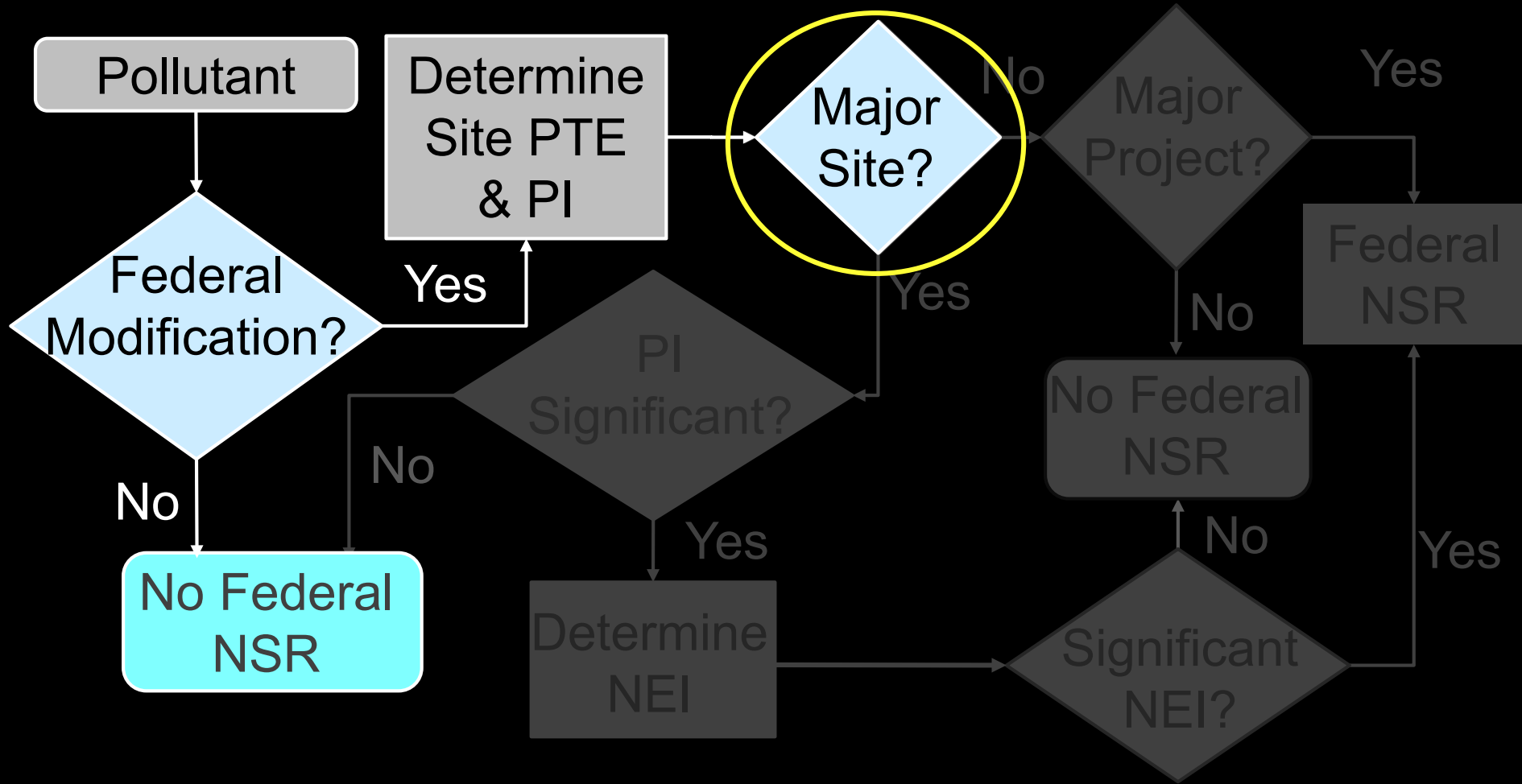
Baselines  $\geq$  current PTE

New facility within 24  
months of initial startup

Equipment leak fugitives

Table 2F


# Federal Review Flowchart



# Major Source/Site Determination

## PSD

- Any regulated pollutant designated as “attainment” or “unclassifiable” in an area
- Named Sources: 100 tpy  
Unnamed Sources: 250 tpy
- Major for one pollutant,  
major for all pollutants

## Nonattainment

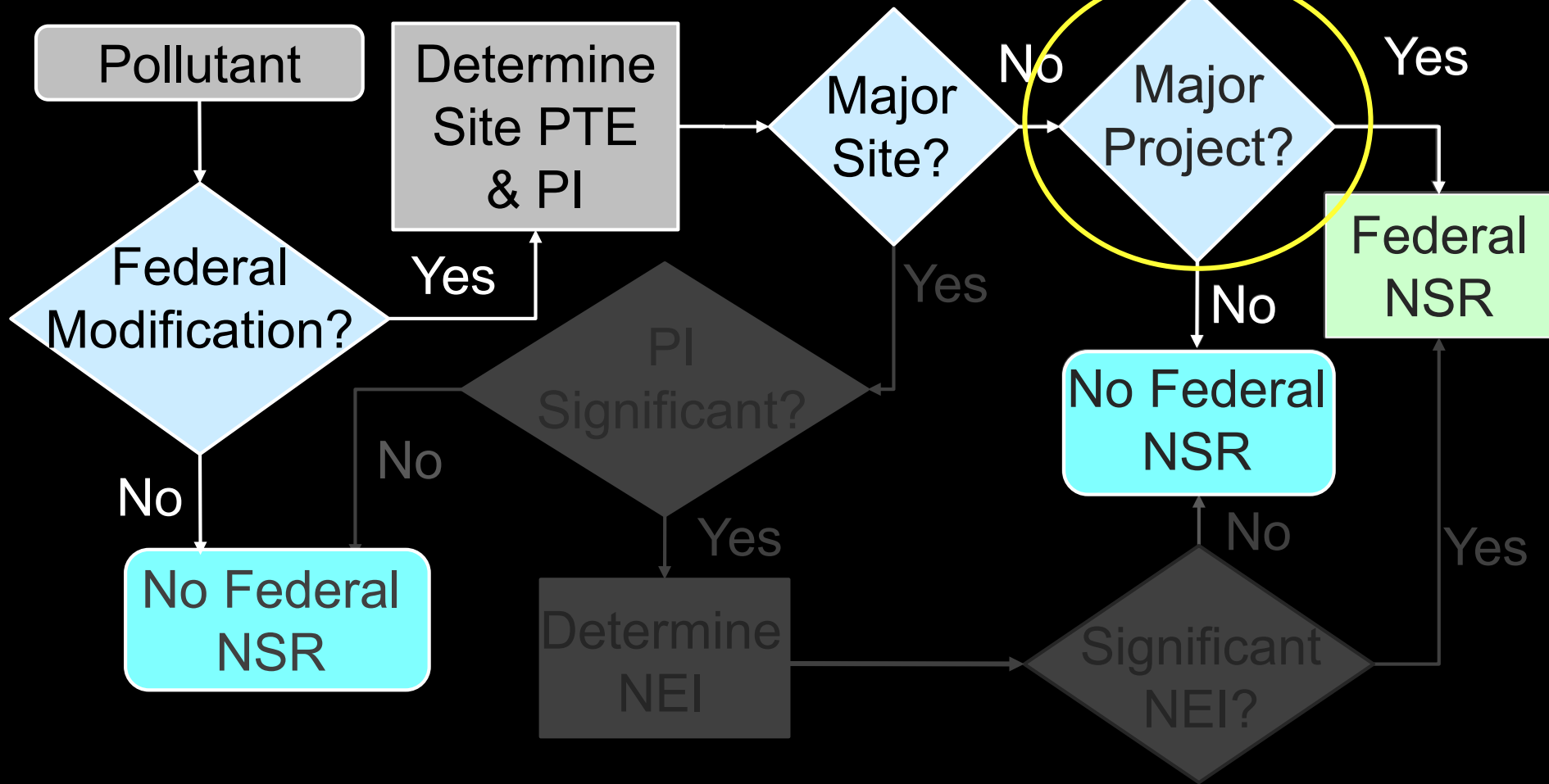
- Only in NA Area for NA pollutant
- Thresholds based on NA classification for county
- Major source determined for each pollutant individually

# Major Source/Site Determination

## Current Nonattainment MS Thresholds Applicable in Texas

- ◎ Ozone:
  - Moderate (HGB and DFW): 100 tpy NO<sub>x</sub> or VOC
  - Marginal (Bexar County): 100 tpy NO<sub>x</sub> or VOC
- ◎ Moderate NA Area for PM<sub>10</sub> (City of El Paso): 100 tpy
- ◎ SO<sub>2</sub> (portions of Titus, Rusk, Panola, Anderson and Freestone Counties) : 100 tpy

# Federal Review Flowchart



# Major Projects

- New Major Source.
- For existing minor sources, PI is compared to MS threshold to determine if federal review is required (i.e., if it is a “major project”).
- Netting not performed.
- For PSD, if PI of one pollutant  $\geq$  MS threshold, PI of all remaining pollutants are compared to MM thresholds/SER.



# Example: New Major Site

- Greenfield site

- Sitewide PTE = PI

- Crude oil tank farm

- Proposed 500,000 bbls capacity

- “named” source  
(40 CFR §52.21(b)(1)(iii))

- MS threshold = 100 tpy

- Attainment county

- NNSR not applicable

## Example: New Major Site

Pollutant	PTE = PI (tpy)	PSD Major Modification Threshold (tpy)	PSD review required?
NO <sub>x</sub>	60	40	Yes
CO	75	100	No
VOC	120	-	Yes
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	30	25/15/10	Yes
SO <sub>2</sub>	45	40	Yes
GHGs	13,000	75,000	No

At least one pollutant > 100 tpy major source threshold

## Example: Major NNSR Project

- Moderate nonattainment ozone area
- Existing minor source for VOCs and NOx
- Proposed one new facility and modification of one existing facility. There will also be one affected facility.

### For VOCs:

Source	Existing PTE (tpy)	BAE (tpy)	Proposed PTE (tpy)	PTE Increase (tpy)	PI (tpy)
New Facility	0	0	30	30	30
Modified Facility	50	20	60	10	40
Affected Facility	45	20	55	10	35
<b>Total</b>	<b>95</b>	<b>40</b>	<b>145</b>	<b>50</b>	<b>105</b>

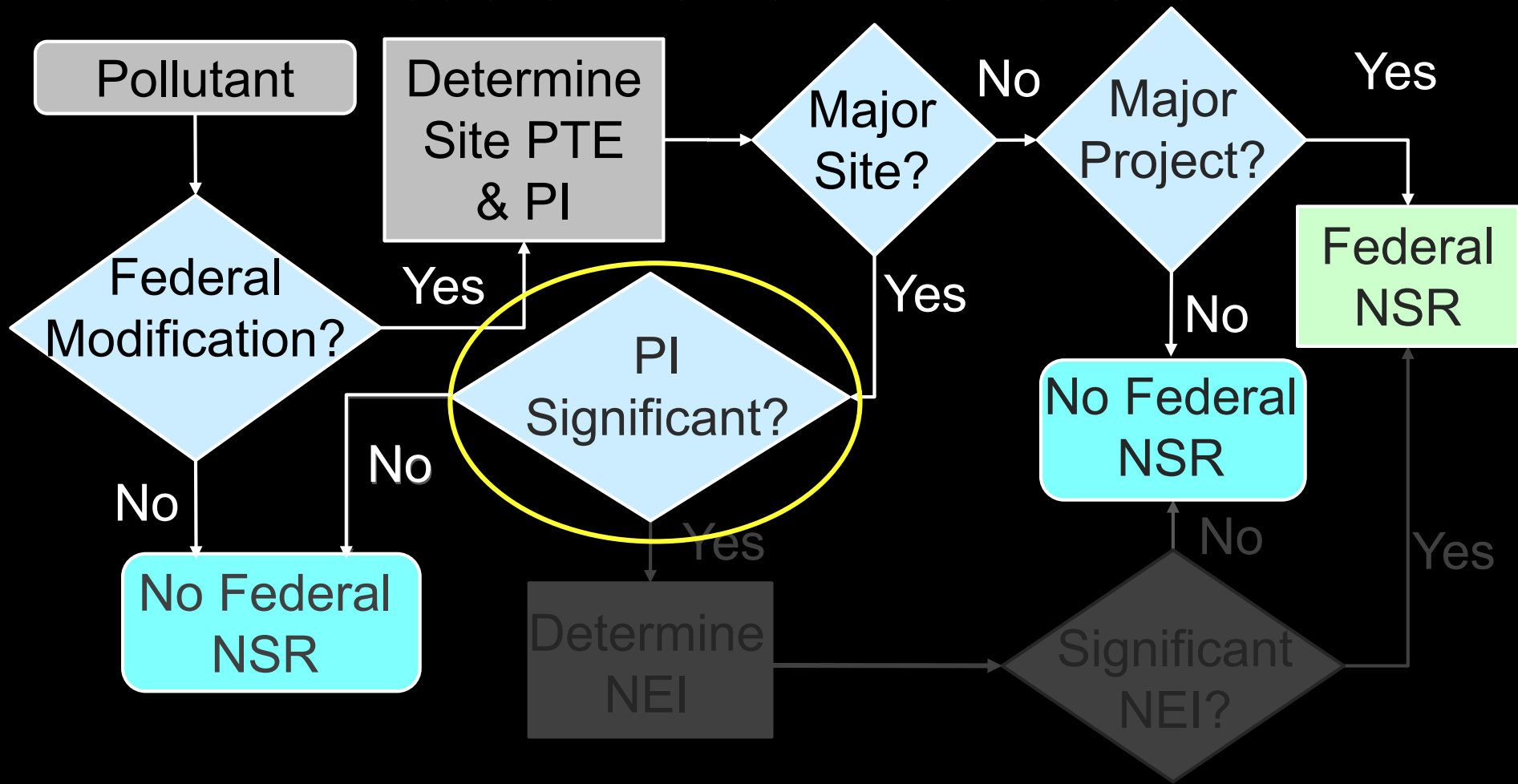
# Example: Major NNSR Project

- ◉ Moderate nonattainment ozone area  ratio: 1.15 to 1
- ◉ Existing minor source for VOCs and NOx

## For VOCs:

Source	PI (tpy)			
New Facility	30	<b>MS (tpy)</b>	<b>NA Review?</b>	<b>Offsets (tpy)</b>
Modified Facility	40			
Affected Facility	35			
<b>Total</b>	<b>105</b>			
		100	Yes	120.8

# Federal Review Flowchart



# PSD Significant Emission Rates (SERs)

Pollutant	PSD SER (tpy)*
NO <sub>x</sub>	40
CO	100
SO <sub>2</sub>	40
VOC	40
PM	25
PM <sub>10</sub>	15
PM <sub>2.5</sub>	10

Pollutant	PSD SER (tpy)*
Pb	0.6
Fluorides	3
H <sub>2</sub> SO <sub>4</sub>	7
H <sub>2</sub> S	10
TRS	10
GHG**	75,000

\* Trigger for netting and review

\*\* Only if PSD is triggered by another pollutant first

# Example: Determining Project Increase (PI)

- Named source
- Project involves two modified facilities
- Attainment area

Pollutant	Current Sitewide PTE (tpy)
NO <sub>x</sub>	135
CO	131
VOC	51
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	6.2
SO <sub>2</sub>	276

Site-wide PTE of at least one pollutant  $\geq 100$  tpy  $\rightarrow$  Existing major source for all PSD pollutants.

# Example: Determining Project Increase (PI)

- Named source
- Project involves two modified facilities
- Attainment area
- Set BAE=0 to evaluate worst-case scenario

Pollutant	Facility 1		Facility 2	
	BAE	Proposed PTE	BAE	Proposed PTE
NO <sub>x</sub>	?	3.6	?	5.3
CO	?	10.2	?	4.5
VOC	?	12.3	?	8.9
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	?	0	?	3.2
SO <sub>2</sub>	?	5.9	?	7.5



# Example: Determining Project Increase (PI)

- Named source
- Project involves two modified facilities
- Attainment area
- PI = Proposed PTE - BAE

Pollutant	Facility 1		Facility 2		PI (tpy)
	BAE	Proposed PTE	BAE	Proposed PTE	
NO <sub>x</sub>	0	3.6	0	5.3	8.9
CO	0	10.2	0	4.5	14.7
VOC	0	12.3	0	8.9	21.1
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	0	0	0	3.2	3.2
SO <sub>2</sub>	0	5.9	0	7.5	13.4

# Example: Determining Project Increase (PI)

○ Named source    ○ Project involves two modified facilities

○ Attainment area

PI < SER, PSD review is not required

Pollutant	PI (tpy)	PSD MM Threshold/SER (tpy)	PSD Review Triggered?
NO <sub>x</sub>	8.9	40	No
CO	14.7	100	No
VOC	21.1	40	No
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	3.2	25/15/10	No
SO <sub>2</sub>	13.4	40	No

# NA Significant Emission Rates

Area	Pollutant	Current Designation	Netting Trigger (tpy)	SER (tpy)
HGB and DFW	Ozone as NO <sub>x</sub> or VOC	Moderate	40	40
Bexar County	Ozone as NO <sub>x</sub> or VOC	Marginal	40	40
El Paso	PM <sub>10</sub>	Moderate	15	15
Anderson County, et al	SO <sub>2</sub>	Nonattainment	40	40

## Example: Significant Project

- Existing site
  - Moderate ozone NA area
  - Unnamed source
- major source for one PSD pollutant  
↓  
major source for all PSD pollutants

Pollutant	Current sitewide PTE (tpy)	MS Threshold		Major Source?	
		NA	PSD	NA	PSD
NO <sub>x</sub>	300	100	250	Yes	Yes
CO	275	-	250	-	Yes
VOC	50	100	-	No	-
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	30	-	250	-	Yes
SO <sub>2</sub>	45	-	250	-	Yes

# Example: Significant Project

- Existing site
- Moderate ozone NA area
- Unnamed source
- Project:
  - one modified source ("Source 1"),
  - one new source ("Source 2")

Pollutant	Source 1			Source 2			Total PI
	BAE	PTE	PI	BAE	PTE	PI	
NO <sub>x</sub>	50	60	10	0	50	50	60
CO	75	90	15	0	65	65	80
VOC	50	75	25	0	60	60	85
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	5	8	3	0	5	5	8
SO <sub>2</sub>	20	30	10	0	15	15	25

## Example: Significant Project

- First, determine whether the project is a major project for VOCs
- Use MS threshold instead of netting or major modification thresholds

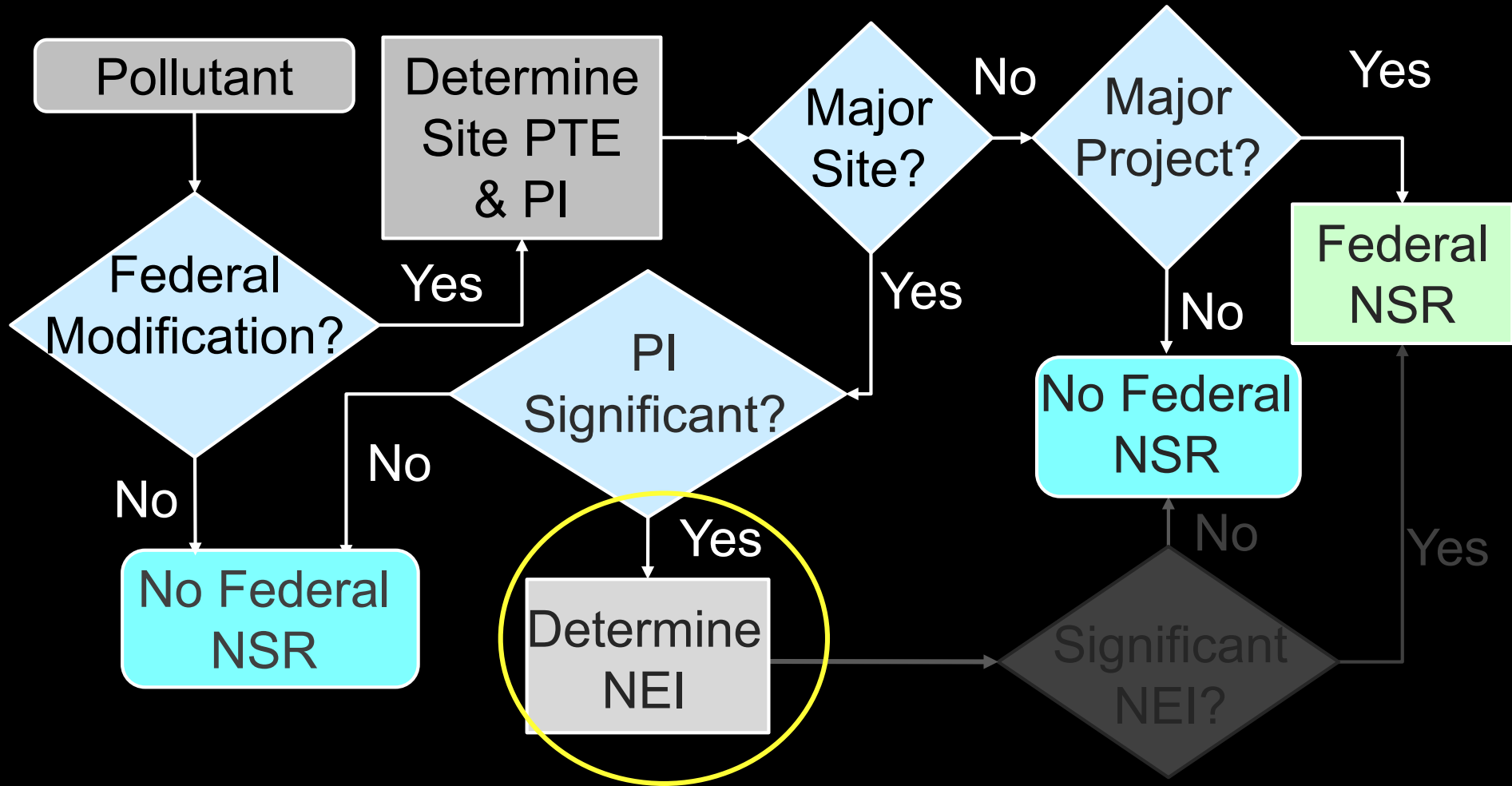
Pollutant	PI (tpy)	NA MS Threshold	Major NA Project for VOCs?
NO <sub>x</sub>	60		
CO	80		
<b>VOC</b>	<b>85</b>	<b>100</b>	<b>No</b>
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	8		
SO <sub>2</sub>	25		

## Example: Significant Project

- Next, determine whether the project is significant for remaining pollutants
- Compare PI against MM threshold/SER for each pollutant

Pollutant	PI (tpy)	Netting Trigger		Netting Triggered?	
		NA	PSD	NA	PSD
NO <sub>x</sub>	60	40	40	Yes	Yes
CO	80	-	100	-	No
VOC	85	N/A	-	N/A	-
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	8	-	25/15/10	-	No
SO <sub>2</sub>	25	-	40	-	No

# Federal Review Flowchart





# Contemporaneous Netting

Ensures smaller projects do not add up to be a major modification

Applies to existing major sources only.....

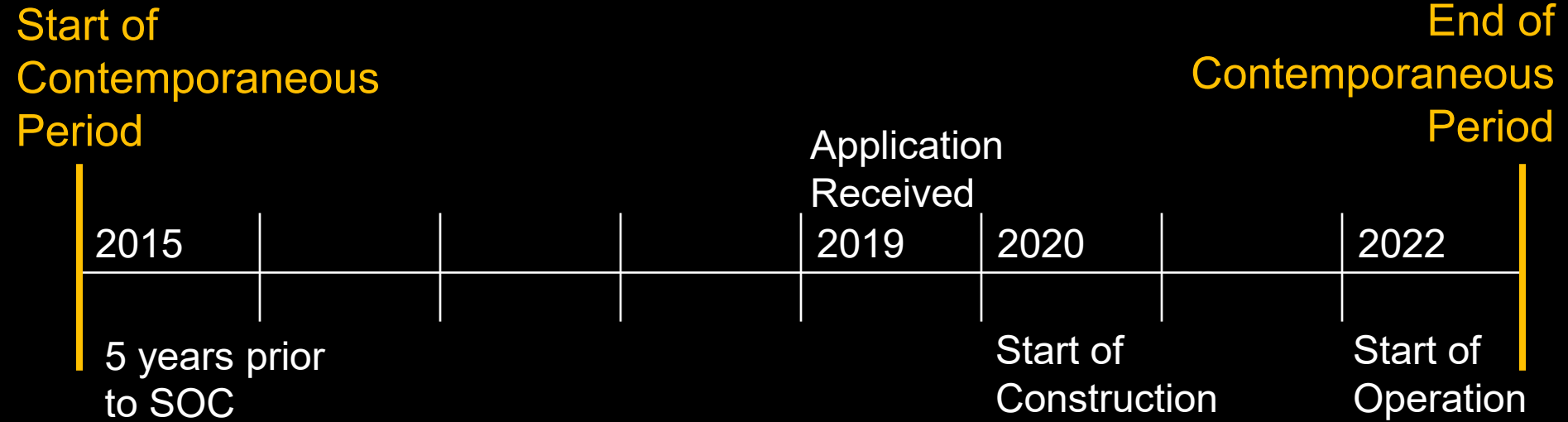
IF Project Emissions Increase  $\geq$  Netting threshold

For PSD, netting threshold = MM threshold/SER

Conducted per pollutant

Emission changes within contemporaneous period

# Contemporaneous Period



# Creditable Increases and Decreases

A large, light blue arrow pointing upwards, with the word 'Increases' written in black text inside its shaft.

## Increases

- During contemporaneous period
  - Confirmed by Emissions Inventory
    - Include planned projects prior to SOO
- Not previously relied upon in issuing Major NSR Permit

A large, light blue arrow pointing downwards, with the word 'Decreases' written in black text inside its shaft.

## Decreases

- During contemporaneous period
- Only amount that new PTE is less than BAE.
- Must be real and enforceable prior to SOO
  - Not required to meet Permit / SIP
- Not previously relied upon in issuing Major NSR Permit (PSD or NA) or used as an offset

# Project Contemporaneous Changes

Demonstrate on Table 3F

All increases and decreases within netting window, including current project

Include EPNs, Project and Permit Nos., and Baseline Period(s)

Table 3F

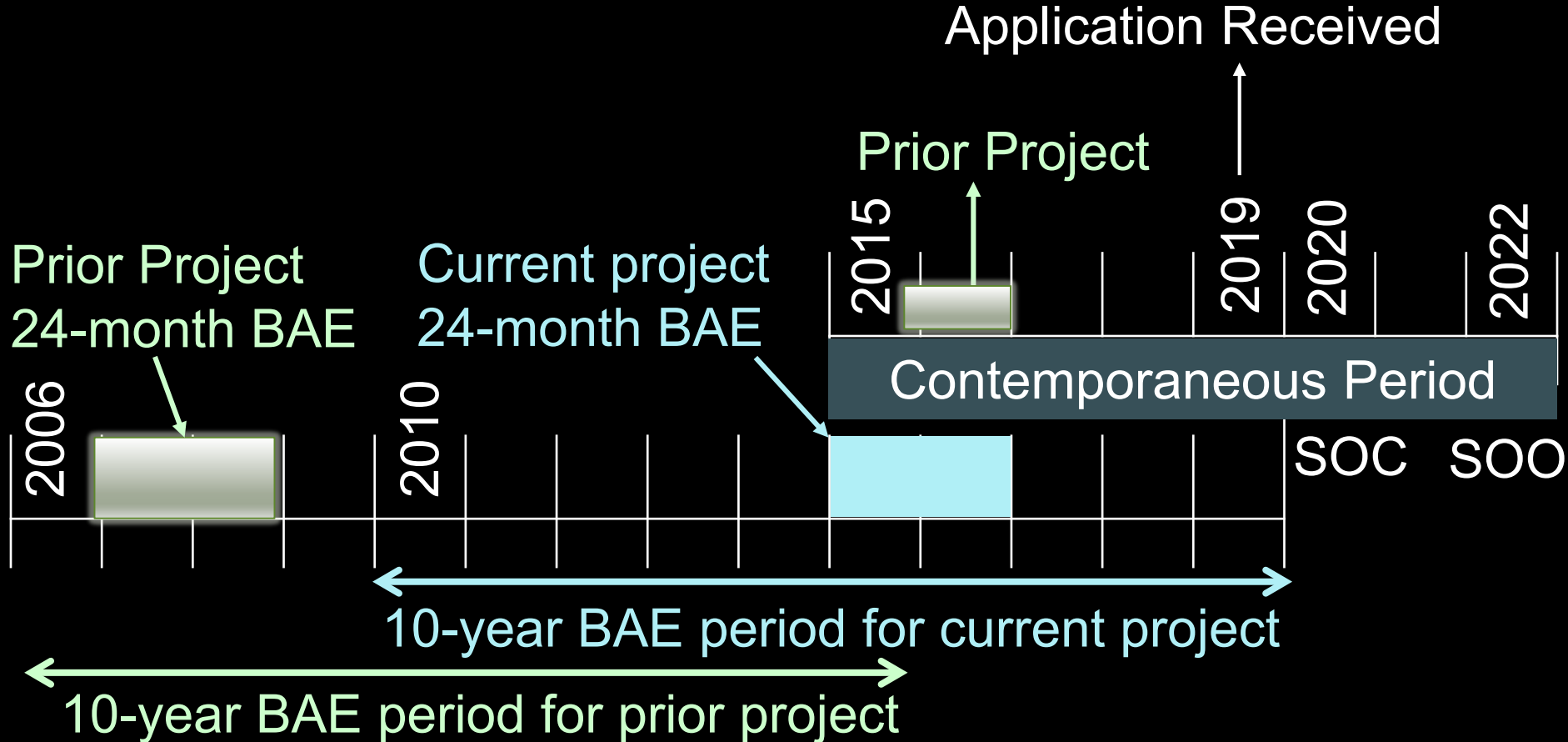

# Creditable Decreases

Table 4F

Complete a Table 4F for each decrease.


Statements verify that claimed decreases are creditable.

# Contemporaneous and BAE Period



# Net Emissions Increase (NEI)

NEI

=

Contemporaneous Increases  
(including current project)

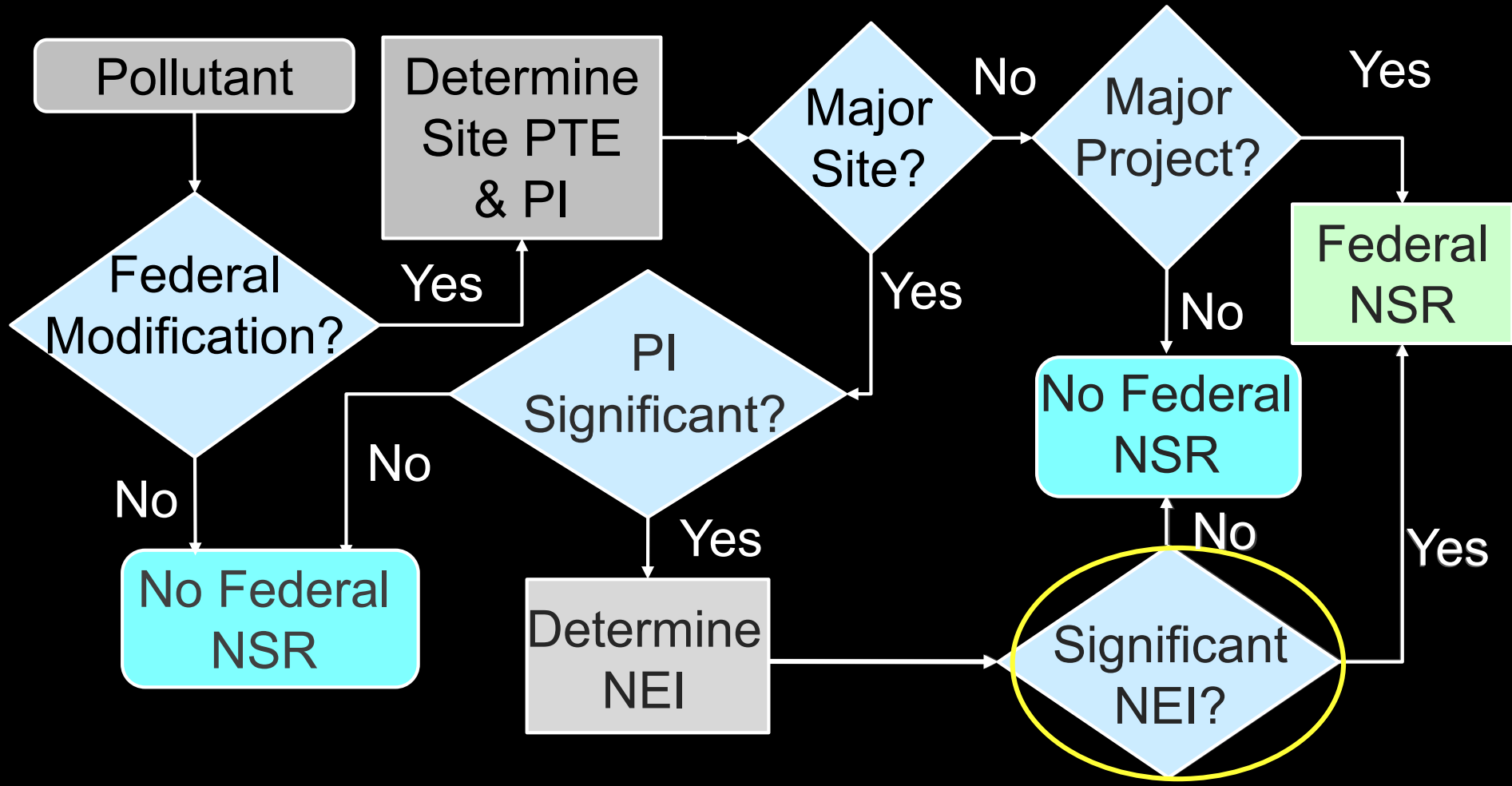
-

Contemporaneous  
Decreases

$NEI \geq \text{Major Modification Threshold?}$

Major NSR is triggered!

# Federal Review Flowchart





## Example: Netting

- Adding new tanks, loading dock, and control device to existing site
- Attainment for all pollutants
- Existing named major source

Pollutant	PI (tpy)	PSD SER	Netting Triggered?	NEI (tpy)	PSD Review Required?
NO <sub>x</sub>	70	40	Yes	56	Yes
CO	110	100	Yes	73	No
VOC	52	40	Yes	47	Yes
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	30	25/15/10	Yes	27	Yes
SO <sub>2</sub>	45	40	Yes	32	No
GHGs	85,500	75,000	N/A	N/A	Yes

# PSD and Nonattainment Review

Additional requirements for PSD or Nonattainment reviews:

- Review of RBLC Database
- Additional notification requirements
- Preparation of Preliminary Determination Summary (reviewer)

## PSD:

- BACT evaluation
- Additional modeling requirements

## Nonattainment:

- LAER evaluation
- Alternative site analysis
- Tables 4N, 6N and 9N
- Obtain offsets

# Contacts

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