Working Group Meeting #3

Proposed Amended Rule 461 – Gasoline Transfer and Dispensing

Proposed Rule 461.1 – Gasoline Transfer and Dispensing for Mobile Fueling Operations

Proposed Amended Rule 219 – Equipment not Requiring a Written Permit Pursuant to Regulation II

Meeting Information

March 18, 2021
1:00 p.m.

Zoom Meeting Link:
https://scaqmd.zoom.us/j/96860460326

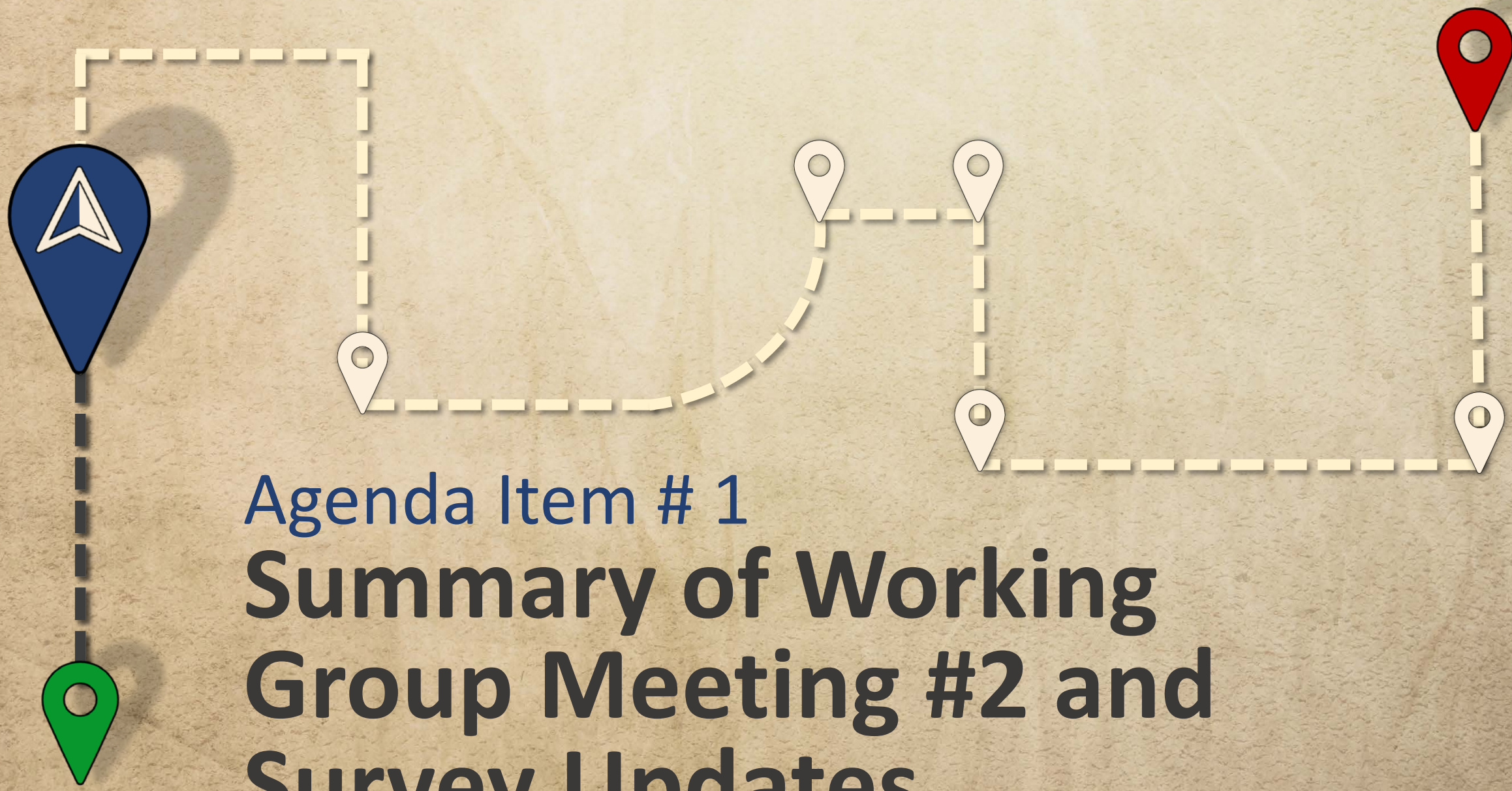
Dial In:
+1 (669) 900-6833

Meeting ID:
968 6046 0326

Meeting Password:
476509

Presentation Agenda Overview

- Summary of Working Group Meeting #2 and Survey Updates
- Overview of Mobile Fueler Permitting
- Evaluating Health Risks for Gasoline Dispensing Permits
- Overview of Emission Sources from Gasoline Dispensing
- Risk Assessment Tier Path
- Next Steps



Agenda Item # 1

Summary of Working Group Meeting #2 and Survey Updates

Working Group Meeting #2 Summary

- Discussed coordination with fire authorities
- Summarized CARB vapor recovery certification process for mobile fuelers
- Overview of equipment and certification process for a CARB certified mobile fueler
- Summarized South Coast AQMD Rule 461 requirements and CARB certified vapor recovery systems for mobile fuelers:
  - Mobile fueler Phase I vapor recovery systems
  - Mobile fueler Phase II vapor recovery systems

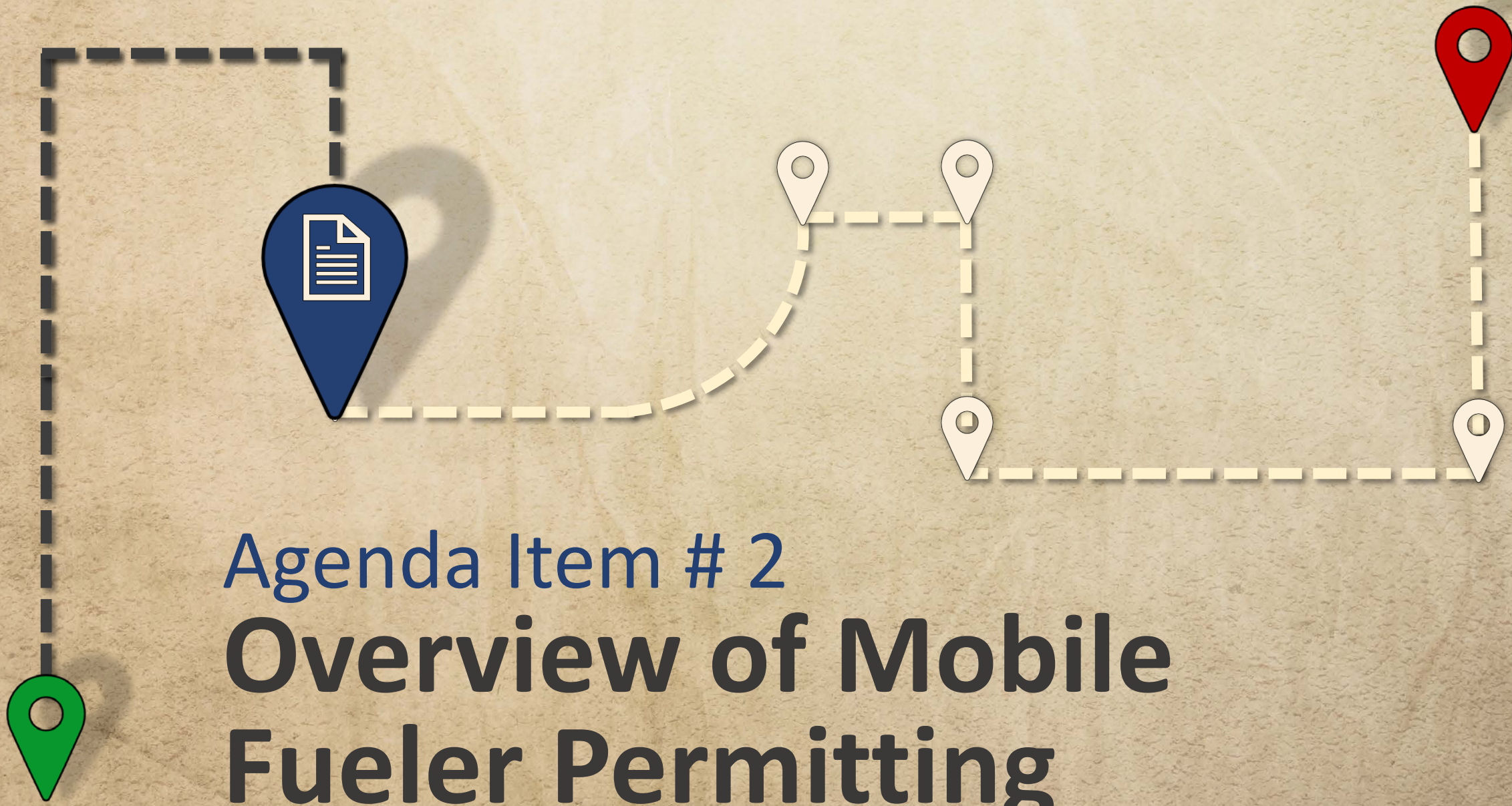
Survey for Mobile Fueling Operations

- Staff distributed a survey to collect current operational information
- Microsoft Forms survey is available via the South Coast AQMD Proposed Rules and Proposed Rule Amendments website:

  http://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules
- Please submit completed surveys by: March 31, 2021

Summary of Survey Responses

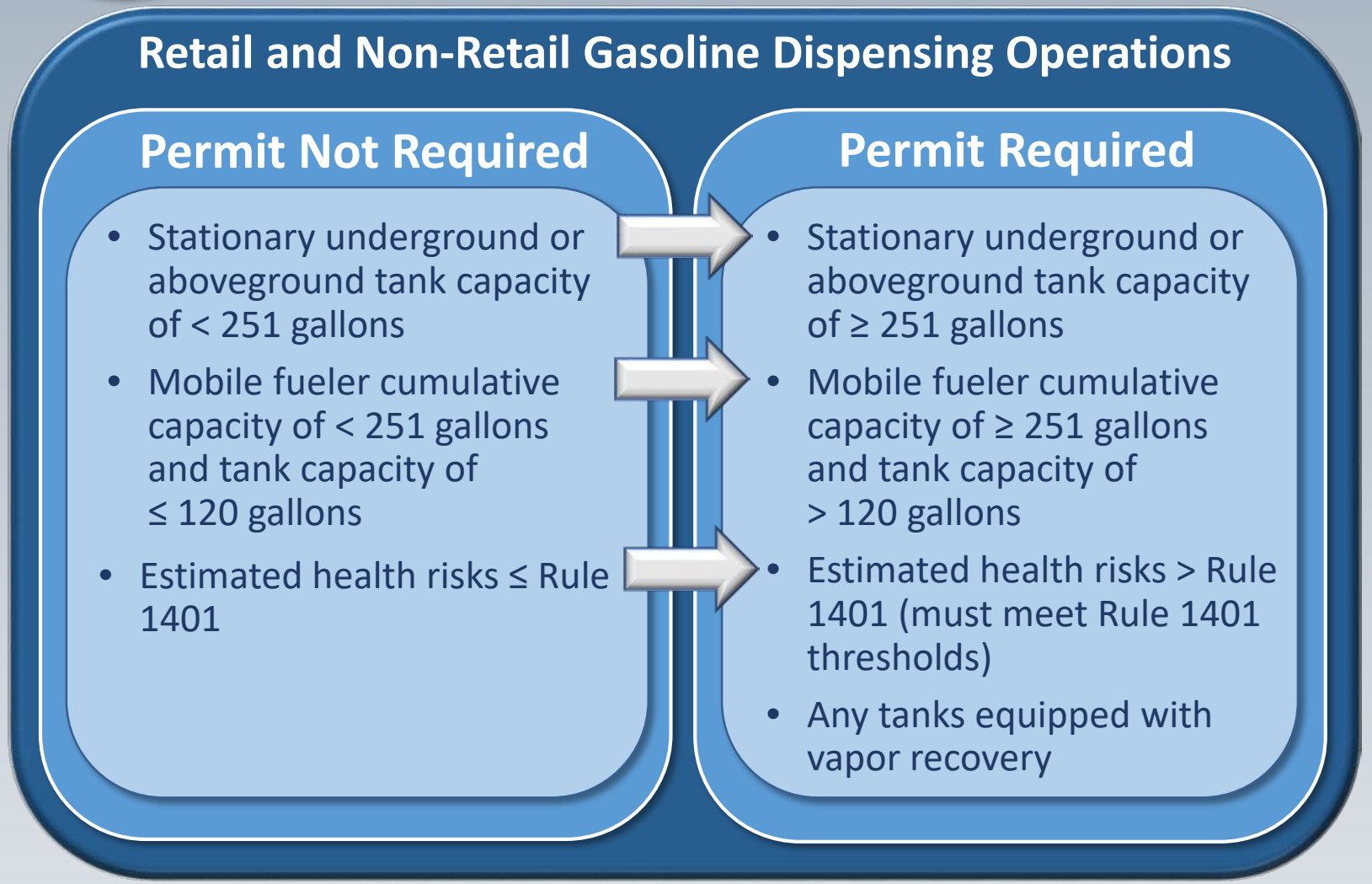
- 11 responses for businesses conducting gasoline mobile fueling
  - 10 non-retail gasoline mobile fueling businesses
    - All operations are subject to current Phase I and Phase II vapor recovery system requirements of Rule 461 and South Coast AQMD permitting requirements
  - 1 retail gasoline mobile fueling
    - Operation is operating with a Phase I vapor recovery system and equipment that is certified by CARB
- No responses received from retail gasoline mobile fueling operations that utilize smaller vehicles, such as pick up trucks, and have a smaller gasoline dispensing capacity
  - Staff is aware that these operations exist based on staff observations, news articles, and websites
  - Details of these operations are needed to better understand these mobile fueling operations for the rule requirements



Agenda Item # 2

Overview of Mobile Fueler Permitting

Permitted and Unpermitted Gasoline Dispensing Operations



- In Working Group Meeting #1, staff presented the gasoline operations that require a permit
- A South Coast AQMD permit establishes specific operating conditions for the equipment or process

Key Non-Retail Mobile Fueler Permit Conditions with Phase I and II Vapor Recovery

Rule Compliance

- Rule 461

Operating Requirements

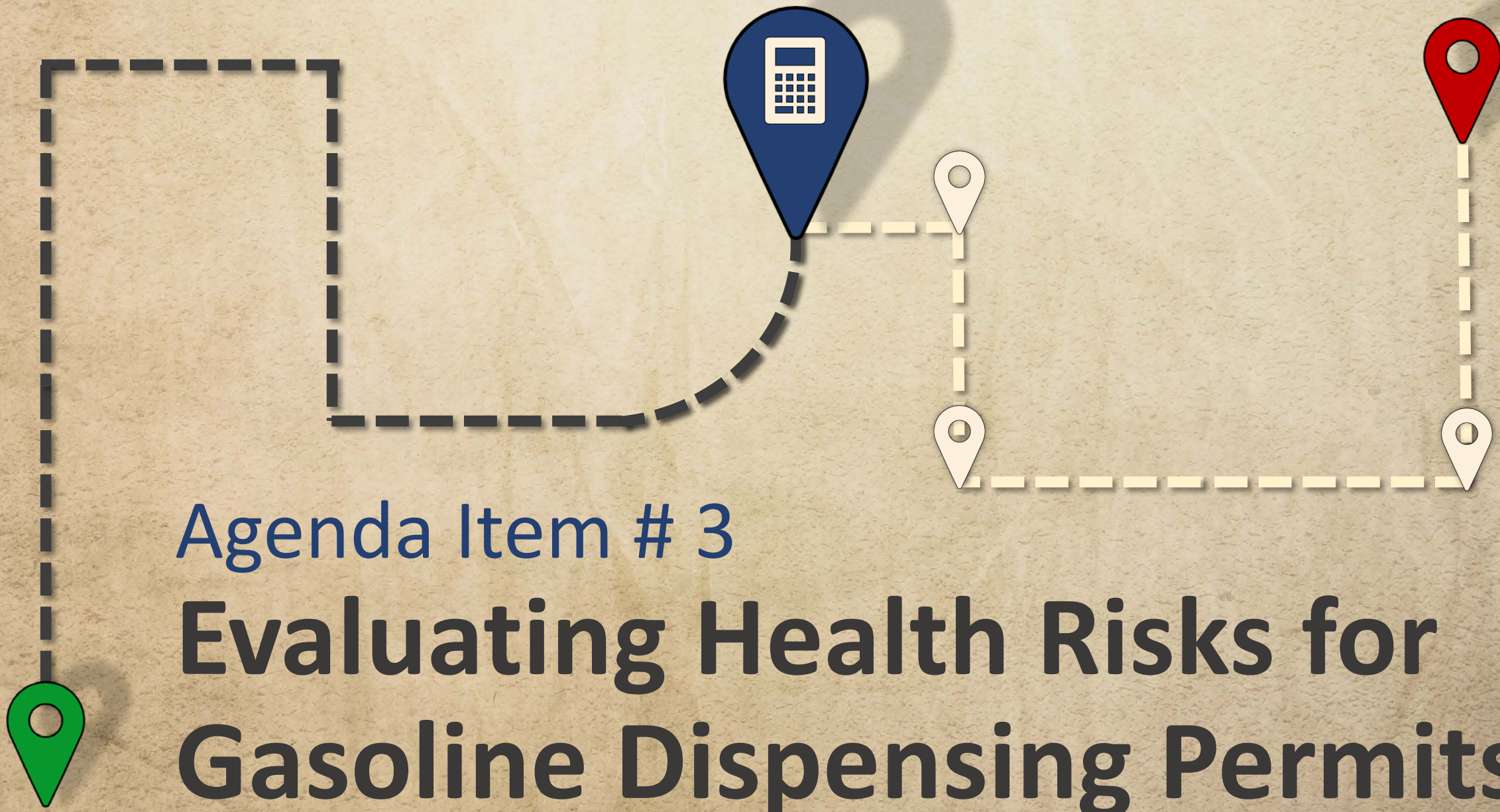
- Install, operate, and maintain Phase I and Phase II vapor recovery equipment
- Operate equipment to prevent release of gasoline emissions (e.g., keep mobile fueler dome hatch closed)
- Maintain applicable pressures within acceptable ranges

Testing, Reporting, and Notification

- Conduct periodic testing to ensure vapor recovery equipment is operating correctly
- Submit throughput, test results, and maintenance logs
- Notify operating information when operating off-site (e.g., contact info, location, distance to sensitive receptor)

Operating Limits

- Limit gasoline throughput (monthly and annual limit) to comply with health risks

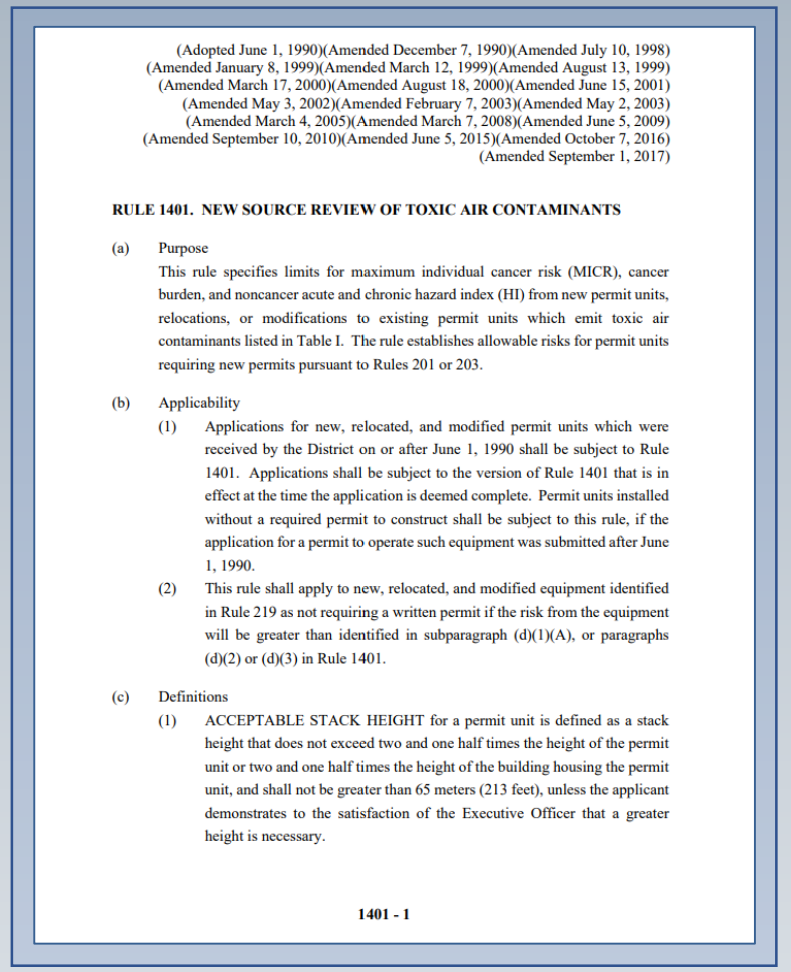


Agenda Item # 3

Evaluating Health Risks for Gasoline Dispensing Permits

Applicable Health Risk Rules Overview

- South Coast AQMD rules for evaluating the health risks for toxic air contaminants include:
  - Rule 1401 – New Source Review of Toxic Air Contaminants
  - Rule 1401.1 – Requirements for New and Relocated Facilities Near Schools



(Adopted June 1, 1990)(Amended December 7, 1990)(Amended July 10, 1998)
(Amended January 8, 1999)(Amended March 12, 1999)(Amended August 13, 1999)
(Amended March 17, 2000)(Amended August 18, 2000)(Amended June 15, 2001)
(Amended May 3, 2002)(Amended February 7, 2003)(Amended May 2, 2003)
(Amended March 4, 2005)(Amended March 7, 2008)(Amended June 5, 2009)
(Amended September 10, 2010)(Amended June 5, 2015)(Amended October 7, 2016)
(Amended September 1, 2017)

RULE 1401. NEW SOURCE REVIEW OF TOXIC AIR CONTAMINANTS

(a) Purpose

This rule specifies limits for maximum individual cancer risk (MICR), cancer burden, and noncancer acute and chronic hazard index (HI) from new permit units, relocations, or modifications to existing permit units which emit toxic air contaminants listed in Table I. The rule establishes allowable risks for permit units requiring new permits pursuant to Rules 201 or 203.

(b) Applicability

(1) Applications for new, relocated, and modified permit units which were received by the District on or after June 1, 1990 shall be subject to Rule 1401. Applications shall be subject to the version of Rule 1401 that is in effect at the time the application is deemed complete. Permit units installed without a required permit to construct shall be subject to this rule, if the application for a permit to operate such equipment was submitted after June 1, 1990.

(2) This rule shall apply to new, relocated, and modified equipment identified in Rule 219 as not requiring a written permit if the risk from the equipment will be greater than identified in subparagraph (d)(1)(A), or paragraphs (d)(2) or (d)(3) in Rule 1401.

(c) Definitions

(1) ACCEPTABLE STACK HEIGHT for a permit unit is defined as a stack height that does not exceed two and one half times the height of the permit unit or two and one half times the height of the building housing the permit unit, and shall not be greater than 65 meters (213 feet), unless the applicant demonstrates to the satisfaction of the Executive Officer that a greater height is necessary.

1401 - 1

Evaluating Health Risks for Rules 1401 and 1401.1

- Permit conditions are added to limit the throughput ensuring the:
  - Permit unit emissions do not exceed the health risk thresholds pursuant to Rule 1401
  - Facility-wide emissions do not exceed the health risk thresholds pursuant to 1401.1
- For gasoline dispensing, throughput limitation is the primary mechanism to ensure operations do not exceed applicable health risk thresholds
- Although cancer and non-cancer health risks are evaluated, compliance with Rule 1401 and Rule 1401.1 is based on the cancer risk
  - Cancer risk is the limiting factor in establishing throughput limitations
- A permit will not be issued if the estimated health risks from all toxic air contaminants emitted from a permit unit exceed the applicable Rule 1401 or Rule 1401.1 thresholds

Overview of Rule 1401 Cancer Risk Thresholds

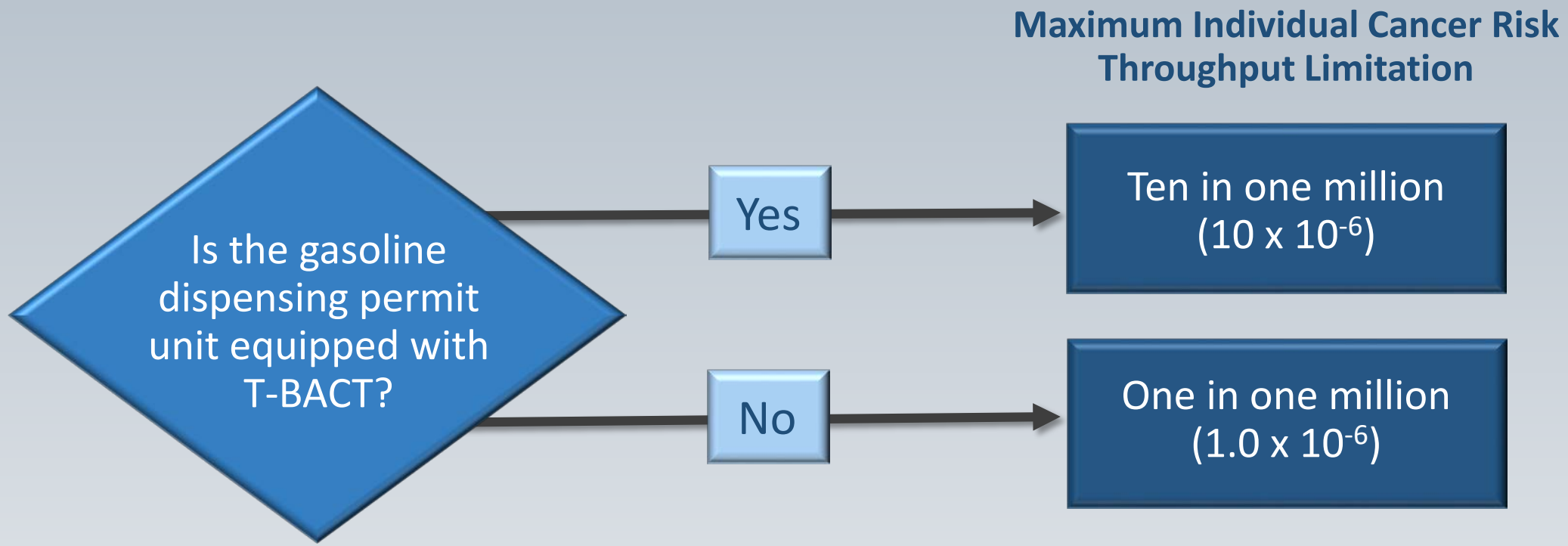
- Permit applications for new, relocated, or modified permit units, that emit toxic air contaminants are evaluated to ensure compliance with Rule 1401
- The health risk thresholds are based on whether the equipment uses Best Available Control Technology for Toxics (T-BACT), which is the most stringent emissions limitation or control technique that has been:
  - Achieved in practice for such permit unit category or class of source
  - Found by the Executive Officer to be technologically feasible for a category of sources or for a specific source
- A gasoline dispensing facility permit will not be issued if the health risks from all toxic air contaminants emitted from a gasoline dispensing operation permit unit exceeds a threshold

T-BACT	Maximum Individual Cancer Risk [1]
No	One in one million (1.0×10^{-6})
Yes	Ten in one million (10×10^{-6})

[1] At any receptor location (residential, worker, or sensitive receptor)

Cancer Risk Thresholds Under Rule 1401

T-BACT is a control technique or emission limitation that results in the maximum degree of emission reductions that the South Coast AQMD had determined is reasonably achievable



Overview of Rule 1401.1 Cancer Risk Thresholds

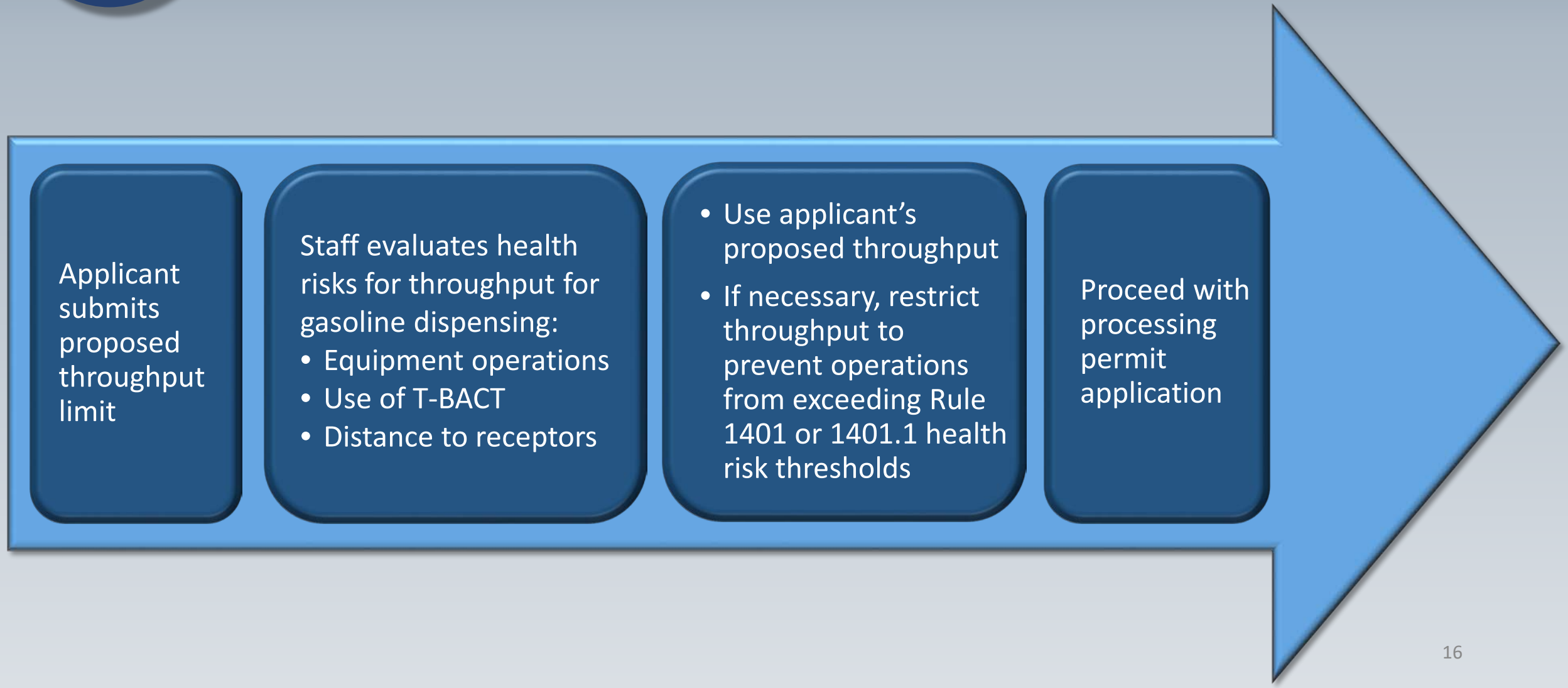
- Permit applications for any permit unit that emits toxic air contaminants at a new facility are evaluated to ensure compliance with Rule 1401.1
- Rule 1401.1 applies to a new or relocated gasoline dispensing facility near schools
  - Establishes cancer risk threshold of one in one million, regardless if the unit has T-BACT
  - Facility-wide risk
- Rule 1401.1 goes beyond Rule 1401 by establishing more stringent thresholds for new or relocated facilities near schools regardless of controls or type of equipment

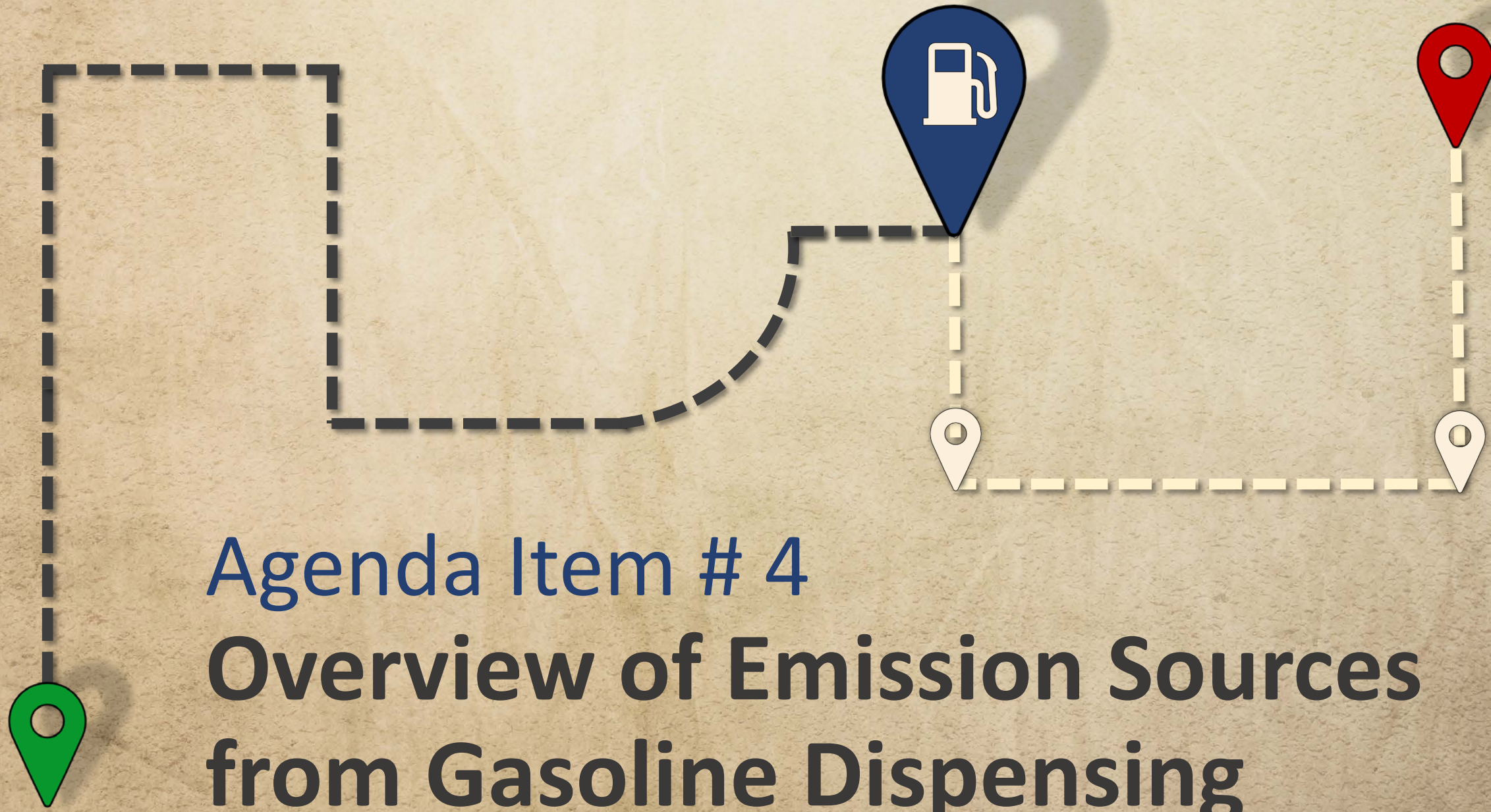
Feet from Outer Boundary of School[1] to Permit Unit	Cancer Risk at School
≤ 500	One in one million (1.0×10^{-6})
> 500 and < 1,000 [2]	

[1] School or school under construction

[2] When there is also no residential or sensitive receptor within 150 feet of the proposed permit unit

Gasoline Dispensing Facility Health Risk Permit Evaluation Process

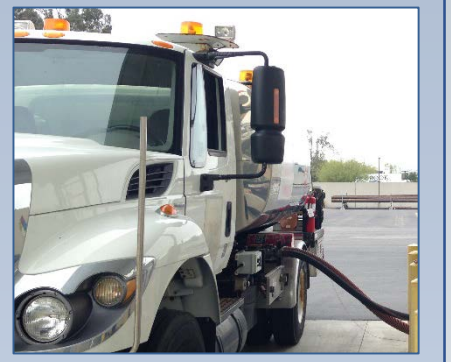




Agenda Item # 4

Overview of Emission Sources from Gasoline Dispensing

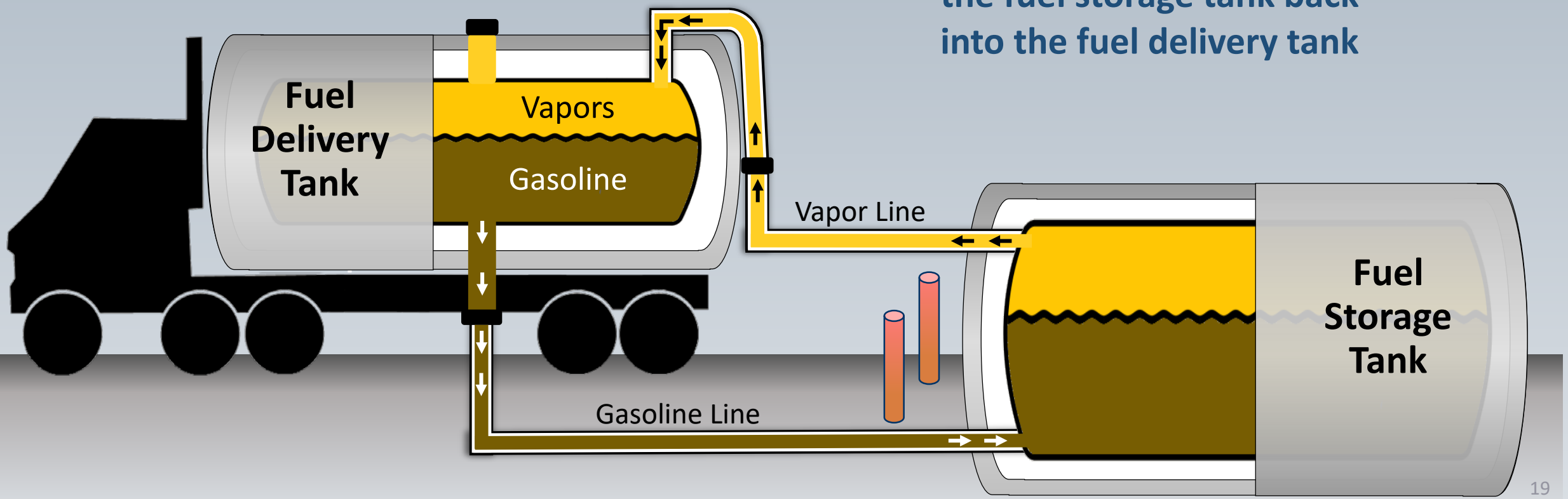
Permitted Emission Sources at Gasoline Dispensing Facilities



- Gasoline dispensing operations have multiple emission points
  - Breathing (tanks)
  - Hose permeation
  - Spillage
  - Fueling during dispensing
- Emission factors vary depending on:
  - Dispensing equipment (e.g., nozzle, hoses, breakaways)
  - Vapor recovery systems
  - Preventative measures
- Emissions from a facility or process are used to determine the facility's health risk

Stationary Gasoline Dispensing Facility Loading Emissions

Phase I: Returns vapors from the fuel storage tank back into the fuel delivery tank



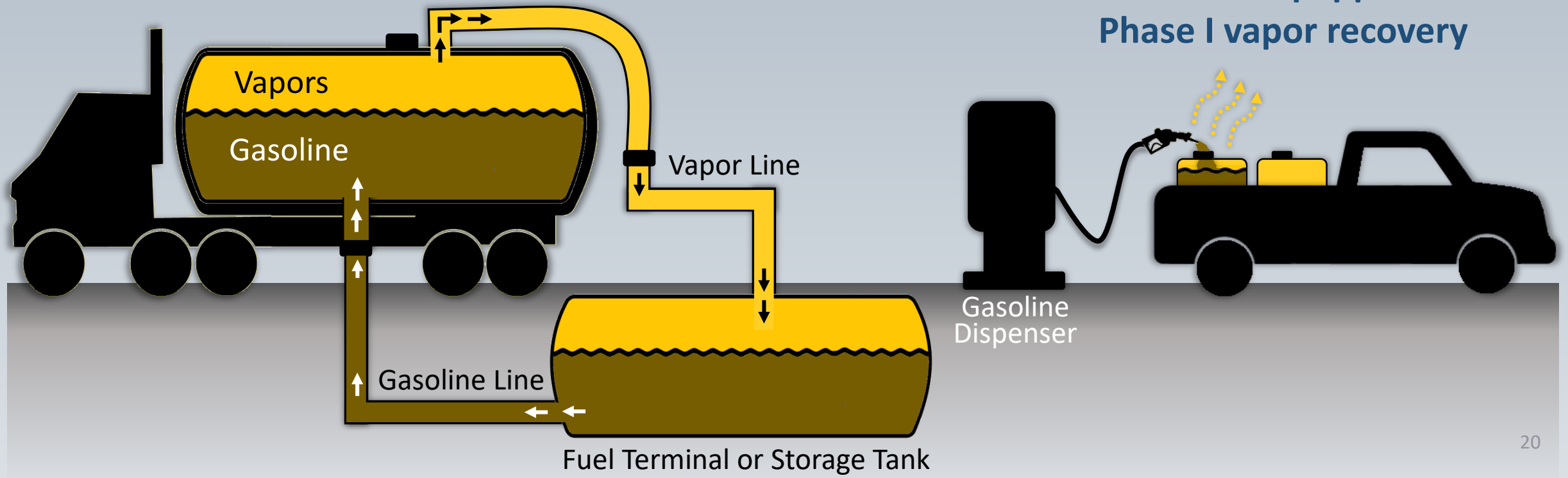
Mobile Fueler Loading Emission Sources

1

Phase I: Returns vapors from the mobile fueler dispensing back into the fuel terminal or storage tank

2

Splash Loading: can be more than 50 times more emissive than tanks that are bottom loaded and equipped with Phase I vapor recovery



Stationary Gasoline Dispensing Facility Non-Loading Emission Sources

Pressure Driven Losses (Breathing)

Based on tank being underground or in a covered area; aboveground tanks are insulated and painted a reflective color, tank may be equipped with a vapor processor

Hose Permeation Losses

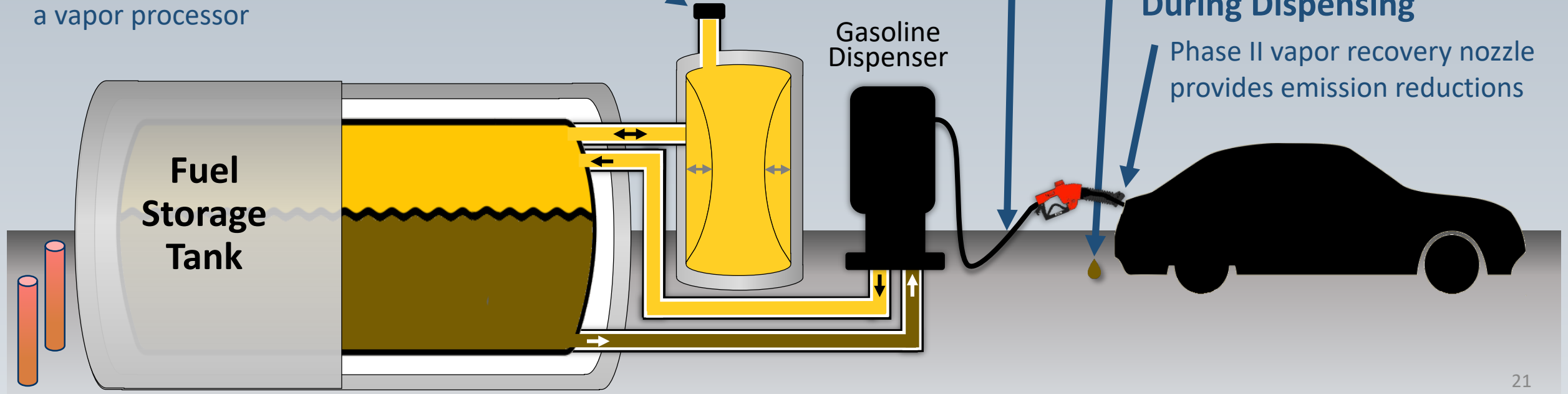
Based on length of hose and gasoline temperature

Spillage Losses

CARB's emission factors for spillage are currently under review

Fueling Losses During Dispensing

Phase II vapor recovery nozzle provides emission reductions



[1] Types of vapor processors include a vapor storage tank bladder system (simplistically depicted), carbon canister, thermal oxidizer, or two types of cell membranes

Mobile Fueler Non-Loading Emission Sources

Pressure Driven Losses (Breathing)

Potentially higher emissions than a gasoline dispensing facility due to vehicle movement, lack of insulation, tank color, tank reflectivity, and operating in open uncovered areas

Hose Permeation Losses

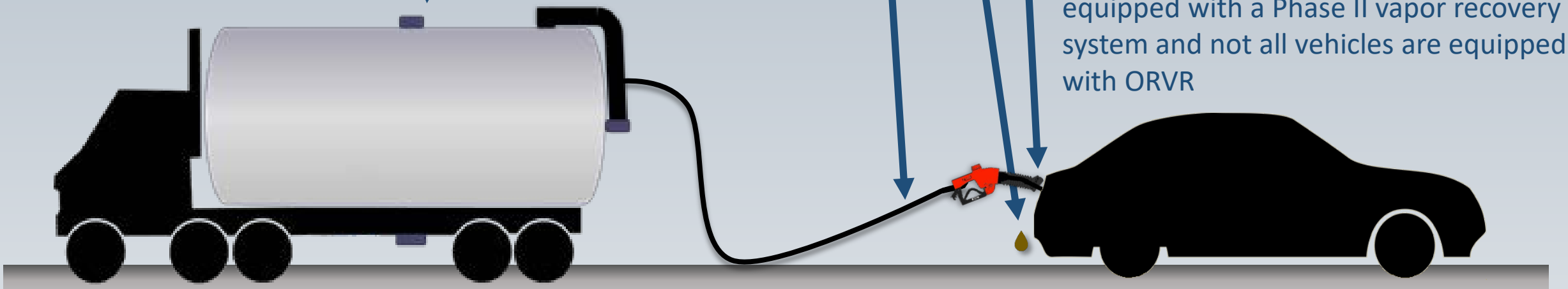
Potentially higher emissions than a gasoline dispensing facility because hose is longer and gasoline temperature is higher

Spillage Losses

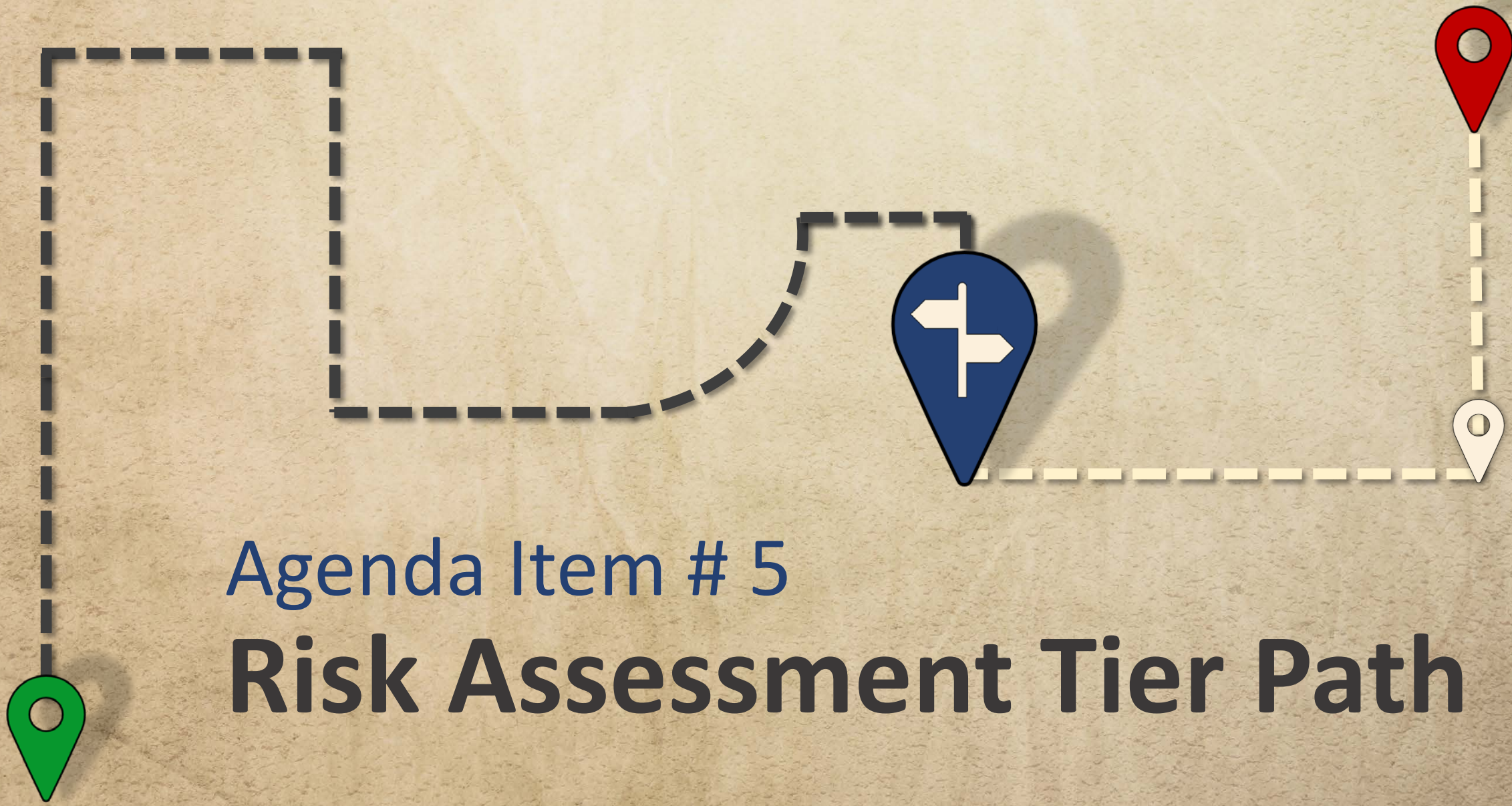
If using a CARB certified Eco Nozzle emissions may be lower than a gasoline dispensing facility

Fueling Losses During Dispensing

Higher emissions than a gasoline dispensing facility as mobile fueler is not equipped with a Phase II vapor recovery system and not all vehicles are equipped with ORVR



Applicable to all mobile fueler models



Agenda Item # 5

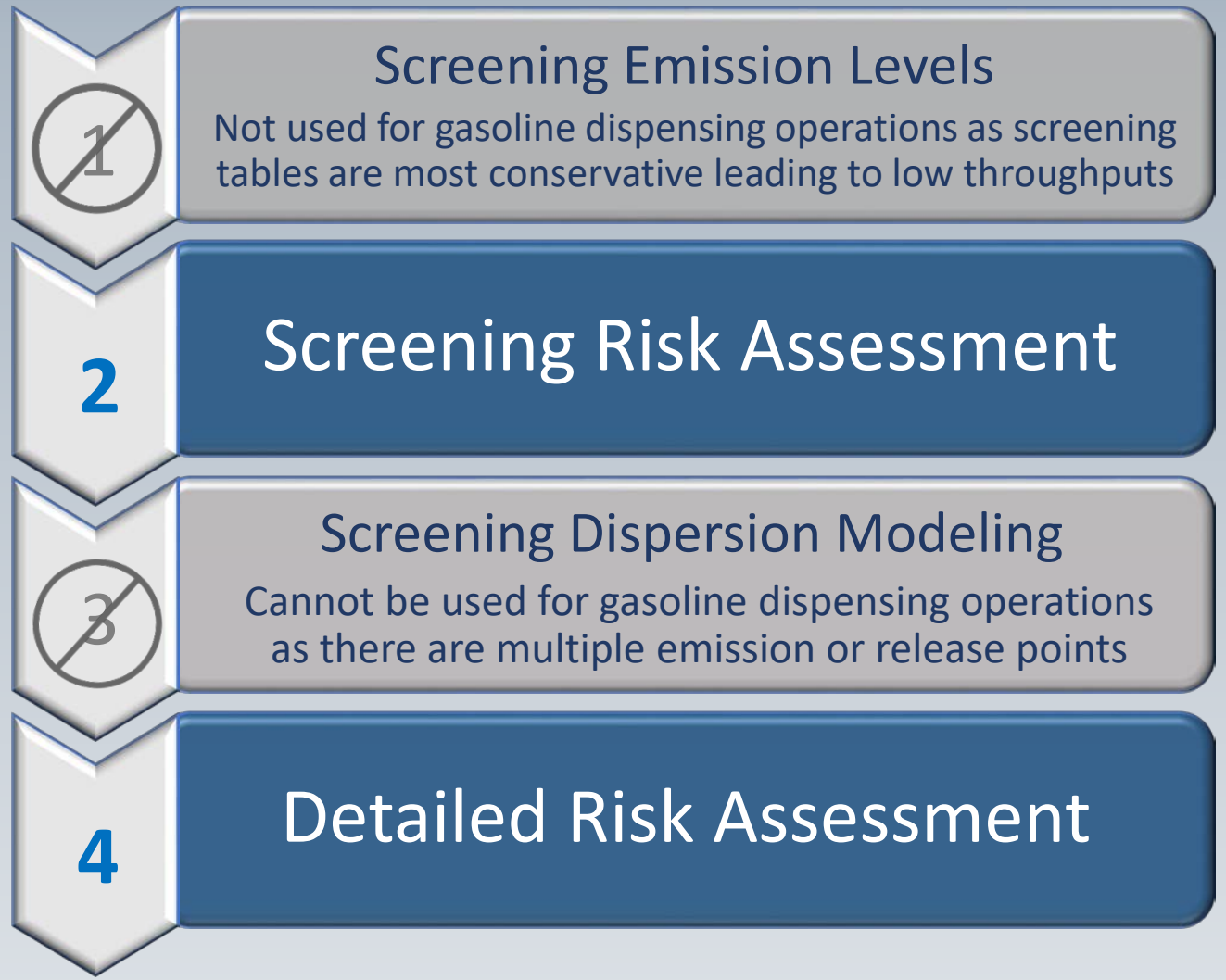
Risk Assessment Tier Path

Methodology to Estimate Health Risks

- South Coast AQMD and other air districts in California follow the methodology established by California Office of Environmental Health Hazard Assessment (OEHHA) for risk assessment
- OEHHA's "Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments" was updated in 2015 to take into account age sensitivity factors
- South Coast AQMD's "Risk Assessment Procedures for Rules 1401, 1401.1 and 212" was updated in 2017 to be consistent with OEHHA's 2015 Guidance
- All health risk assessments submitted for permit applications must follow South Coast AQMD's Risk Assessment Procedures

Risk Assessment Tiers

- There are several tiers for preparing health risk assessments in order of increasing complexity with each higher tier providing a more refined estimate of health risks
- Permit applicants may use any of these tiers to demonstrate compliance with the risk limits of Rule 1401
- Applicants do not use Tier 1 as the conservative assumptions would yield very low throughput limits
- South Coast AQMD guidance does not allow Tier 3 for gasoline dispensing



Tier 2: Screening Risk Assessment Overview

- Is a screening risk assessment
- Screening tables are used to determine the level of risk from a source for cancer risk, HIA, HIC8, and HIC

- Tier 2 screening tables have been developed for underground and above ground stationary gasoline dispensing facilities
- Tier 2 evaluation may be used by stationary gasoline dispensing facilities satisfied with the throughput to ensure health risks are below established thresholds
- Applicant has the option to use Tier 4 analysis to maximize the maximum allowed throughput

- Tier 2 screening tables are for underground and above ground stationary gasoline dispensing facilities which might not have identical source characteristics and emission rates as mobile fuelers
- Tier 4 analysis is needed until Tier 2 screening tables for mobile fuelers are developed

Tier 4: Detailed Risk Assessment Overview

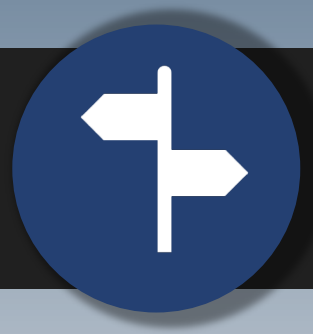
- Involves detailed dispersion modeling using actual meteorological data from the station that is most representative of the facility's meteorological conditions
- Provides a more representative health risk estimate
- Typically requires technical consultant to conduct health risk assessment and dispersion modeling – generally $10,000 to $15,000

- Stationary gasoline dispensing facilities may use Tier 4 analysis to maximize throughput limits

- Tier 4 analysis can be used to calculate throughput limits

Tier 4 Dispersion Modeling Parameters

- Location of each emission source
- Source characteristics (i.e., point source, volume source, or area source)
- Maximum annual emissions of all air toxics (cancer risk and non-cancer chronic hazard index)
- Maximum hourly emissions (non-cancer acute hazard index)
- Receptor grid and discrete sensitive receptors
- Meteorological station



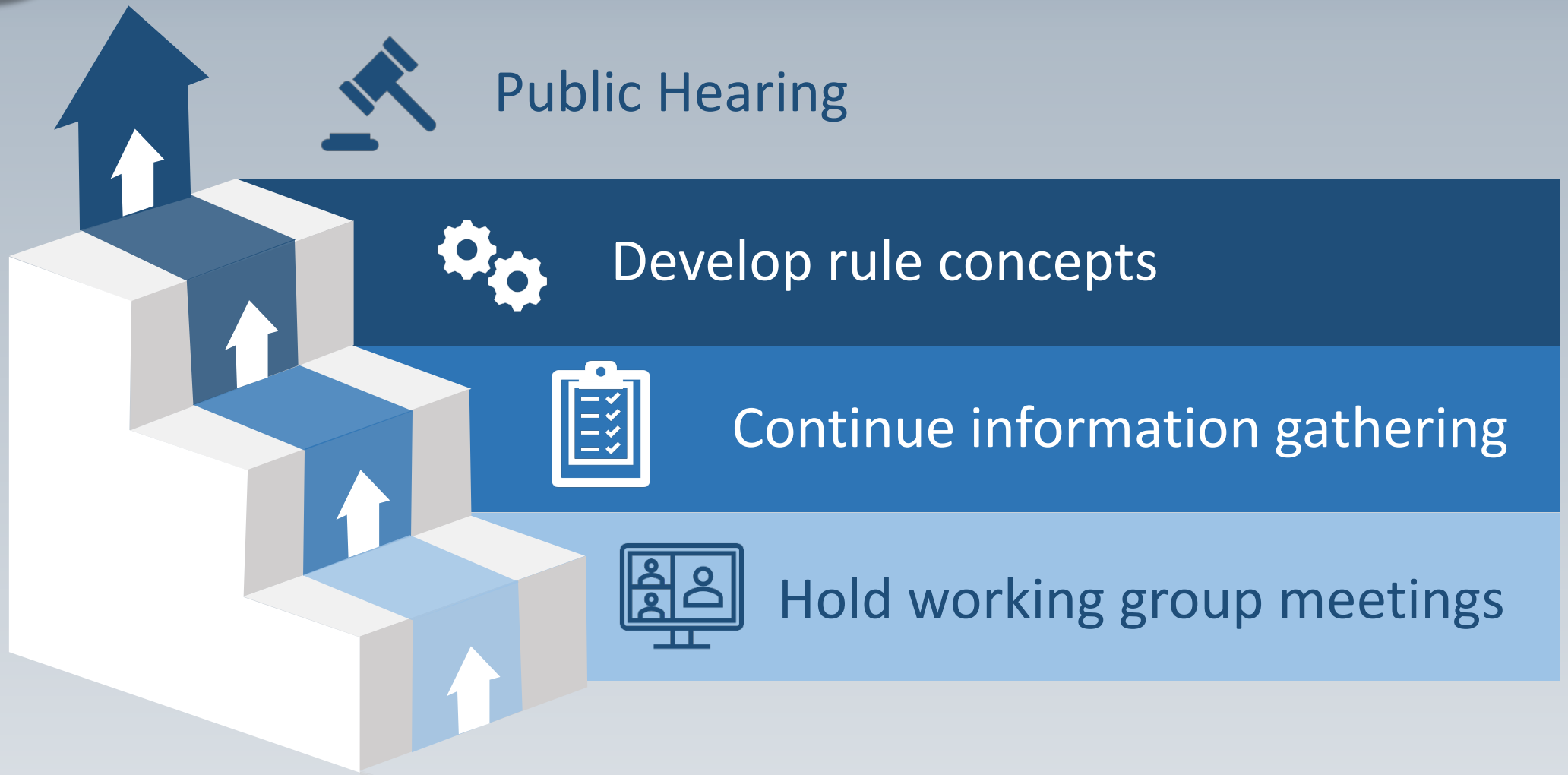
Looking Ahead

- Develop Tier 2 screening tables for mobile fuelers
- Discuss rule concepts for retail mobile fuelers
  - Applicability
  - General requirements

Agenda Item # 6

Next Steps

Next Steps


Public Hearing
Develop rule concepts
Continue information gathering
Hold working group meetings

PARs 461, 219 and PR 461.1
Staff Contacts

Please contact staff with any questions or comments

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