AirKnowledge
DRAFT Content Development Plan (FY 2022-2024)
September 2021

OVERVIEW: This proposed plan indicates the content development work the Environmental Protection Agency (EPA) Office of Air Quality Planning and Standards (OAQPS) National Air Quality Training Program (AirKnowledge) anticipates undertaking during FY 2022–2024. The proposed plan reflects training needs expressed by training partners, including: (1) state and local air agencies, (2) multijurisdictional organizations (MJOs), (3) tribes and tribal organizations, and (4) the EPA (the OAQPS Divisions and EPA Regional Offices). Communities, industry, academia, international audiences, and the public are also expected to have an interest in the new or updated training material generated by AirKnowledge.

CURRICULA: The AirKnowledge team worked across the EPA and with training partners to develop a set of air quality training curricula that frame the scope of AirKnowledge content development efforts.

- These curricula include a broad cross-cutting Air Pollution Basics curriculum and seven job-specific curricula: Air Quality Planning, Permitting, Air Quality Modeling, Ambient Air Monitoring, Emissions Inventories, Air Toxics Rule Development and Implementation, and Source Emissions Testing and Source Emissions Monitoring.

- The curricula are available on the AirKnowledge interim website at www3.epa.gov/ttn/apti/Curriculalist.html. State and local air agencies, tribes, tribal organizations, and MJOs can also access the curricula via the AirKnowledge Learning Management System.

CONTENT DEVELOPMENT: Training material developed by AirKnowledge will meet the learning objectives laid out in the curricula by building out the more detailed information needed by students.

- Content development work to meet the broad curricula learning objectives and maintain current information will be accomplished on an ongoing basis. This proposed content development plan will serve as a living document that will change to some extent as each year progresses.
    - Reasons for shifting a proposed topic from one year to another could include factors such as subject matter expert availability (including impending retirements), emerging priority needs that must be accommodated, and changes in available AirKnowledge resources.
    - As the AirKnowledge team works toward an improved understanding of students' needs and subject matter experts' recommendations, the proposed topics, timing, and delivery methods indicated in this plan will be further refined.

- This proposed FY 2022-2024 plan reflects a current snapshot of AirKnowledge content development efforts for FY 2022 and FY 2023, as they have evolved since last year's plan

(for FY 2021-2023). The content development efforts listed for FY 2024 are based largely on:

  - input on training priorities received from training partners in summer 2020 that could not be accommodated in the FY 2021-2023 plan,
  - feedback received from training partners since summer 2020, and
  - the judgment of the AirKnowledge team. As the team has begun to develop content we have determined that certain subjects would be helpful to address sooner than later because they flow neatly from other content already encompassed by the plan.

- The priorities indicated for the first year (FY 2022) are more firm than those indicated in subsequent years. This plan will be refreshed each year, with EPA and training partner input, to include out-year topics, identify the training materials completed at the end of each year, and make other adjustments as necessary.

- The proposed plan provides a sense of the training materials that the AirKnowledge team would complete in each year; content development would typically begin at least a year prior to the completion dates indicated in this document.

- EPA anticipates further discussions with MJOs to identify key curricula learning objectives that are not addressed by existing training content or by this plan. MJOs could consider these gaps as they map out their plans for the training materials they will take the lead on developing in the coming years.

COMPLETED CONTENT: New AirKnowledge training materials completed in FY 2020 and FY 2021 are listed in the attachments at the end of the plan. These materials are available on the interim website at https://www3.epa.gov/ttn/apti/index.html. States, local governments, tribes, tribal organizations, and MJOs can also access them via the AirKnowledge Learning Management System. Take a look and let us know what you think!

SUMMARY

Click on a fiscal year to jump directly to the location in the plan where the topics for that year are described in more detail.

FY 2024 (page 22)

Air Pollution Basics

- One e-learning module
- Course on Air Toxics Risk Assessment (e-learning)
- Course on Environmental Justice (e-learning)

Air Quality Planning

- Foundational course – Redesignation Process and Maintenance Plans (e-learning)

Air Toxics

- Intermediate course - Air Toxics Risk Assessment (instructor-led, in person delivery)
- Four e-learning modules

Emissions Inventories

- Foundational course – Emission Factors (e-learning)
- Foundational course – Emissions Inventories (e-learning)

Permitting

- Intermediate course – Plantwide Applicability Limits (e-learning)
- Advanced course – Title V Permitting: Advanced Topics for Permit Writers

Source Emissions Testing and Source Emissions Monitoring

- One e-learning module

Attachment 1 AirKnowledge FY 2020 Completed Training Materials (page 28)

Attachment 2 AirKnowledge FY 2021 Completed Training Materials (page 29)

Attachment 3: AirKnowledge FY 2022-2024 Proposed New Content Deliverables (page 30)

PROPOSED FY 2022-2024 CONTENT DEVELOPMENT PLAN

FY 2022

The AirKnowledge team anticipates completing up to 20 training materials in FY 2022. The anticipated list of topics that will be addressed in FY 2022 includes the following:

Air Pollution Basics

1. Air Pollution Basics Overview Course (instructor-led, for in person instruction; course will replace APTI 452: Principles and Practices of Air Pollution)
   - Curriculum: Air Pollution Basics
   - Curriculum Learning Objectives:
     - Identify key historic episodes and events that led to the passage of air pollution control legislation
     - Highlight air pollution control successes since the 1970 passage of the CAA
     - List and describe the types of air pollutants regulated under the CAA
     - Generally describe the sources of air pollution
     - Explain the health and environmental effects of air pollutants
     - Explain basic concepts in environmental science related to air pollution
     - Describe common engineering practices and technologies used to control or minimize air pollutant impacts
     - Outline relevant information in the CAA
     - Outline the steps in the National Ambient Air Quality Standards (NAAQS)-setting process
     - Explain implementation of the NAAQS
     - Define operating permit and New Source Review programs
     - Describe the basic principles for ambient air monitoring
     - Describe the basic principles for emission inventories
   - Delivery Method: In person instructor-led
   - Need for Updated Content Expressed By: EPA OAQPS, MJOs, instructors from the National Older Worker Career Center (NOWCC) program
   - Course Learning Objectives: to be determined

2. New e-learning module – Clean Air Act Successes (upon completion, this module will be bundled with two other existing modules (Clean Air Act History and Clean Air Act Structure) to form a high-level introductory Clean Air Act course)
   - Curriculum: Air Pollution Basics
   - Curriculum Learning Objective:
     - Highlight air pollution control successes since the 1970 passage of the CAA
   - Delivery Method: e-learning
   - Need for Content Expressed By: EPA OAQPS, MJOs
   - Module Learning Objectives:
     - Identify some of the successes related to the reduction of six common air pollutants under the Clean Air Act
     - Identify some of the successes related to the reduction of toxic emissions from various sources
     - Identify some of the successes related to human health benefits
     - Identify some of the successes related to environmental benefits
     - Identify some of the successes related to visibility trends
     - Identify some of the successes related to improved air pollution control technologies

3. New e-learning module – What are Greenhouse Gases?
    - Curriculum: Air Pollution Basics
    - Curriculum Learning Objective:
        - List and describe the types of air pollutants regulated under the CAA: greenhouse gases
    - Delivery Method: e-learning
    - Need for Content Expressed By: MJOs
    - Module Learning Objectives:
        - Identify the four main greenhouse gases, including their properties and sources
        - Generally explain why greenhouse gases are a concern
        - List the factors that affect the potency of greenhouse gases

4. New e-learning module on Health and Environmental Effects of Criteria Pollutants
    - Curriculum: Air Pollution Basics
    - Curriculum Learning Objective:
        - Explain the basic health and environmental effects of air pollutants; criteria pollutants
    - Delivery Method: e-learning
    - Need for Content Expressed By: MJOs
    - Module Learning Objectives:
        - Explain the adverse human health effects related to criteria air pollutants.
        - Explain the environmental effects associated with exposure to criteria air pollutants.

5. New e-learning module on Health and Environmental Effects of Air Toxics
    - Curriculum: Air Pollution Basics
    - Curriculum Learning Objective:
        - Explain the health and environmental effects of air pollutants; HAPs
    - Delivery Method: e-learning
    - Need for Content Expressed By: MJOs
    - Module Learning Objectives:
        - Explain the adverse human health effects related to air toxics.
        - Explain the environmental effects associated with exposure to air toxics.

6. New e-learning module providing a high-level overview of Title V Permitting
    - Curricula: Air Pollution Basics, Permitting
    - Curricula Learning Objectives:
        - Air Pollution Basics
            - Define operating permit and New Source Review programs
                - Title V
        - Permitting (foundational)
            - Examine the purpose of the Title V Permitting Program
            - Identify pollutants covered by the Title V permit program
    - Delivery Method: e-learning
    - Need for Content Expressed By: MJOs, EPA Regional Offices
    - Course Learning Objectives: to be determined

7. New e-learning module – Define Emissions Inventories and Their Components (in FY 2024, this module will be bundled to form a course with eight other modules developed from FY 2021-2024)
    - Curricula: Air Pollution Basics, Emissions Inventories
    - Curricula Learning Objectives:
        - Air Pollution Basics
            - Describe the basic principles for emissions inventories
        - Emissions Inventories (Foundational)
            - Define an emissions inventory
    - Delivery Method: e-learning
    - Need for Content Expressed By: MJOs, EPA OAQPS
    - Module Learning Objectives:
        - Define an air emissions inventory
        - Explain who develops emissions inventories
        - Explain what air emissions inventories are used for
            - Define regulatory and policy development/support
                - Exposure/risk assessments (including source-based modeling)
                - Transport analysis
                - Cost/benefit analysis
                - Compliance, including NAAQS and Regional Haze planning (planning inventories, modeling inventories, source-based modeling)
                - Designations
                - Permits
            - Describe health assessments such as the National Air Toxics Assessment
            - Define key terms such as model evaluation, siting ambient monitors, research, trends, public "right to know"
            - Describe reporting for international agreements
        - Describe the general components of any emissions inventory
            - Identify what types of pollutants are covered (criteria pollutants, HAPs, GHGs, other)
            - Identify what emission sources are covered (anthropogenic and natural)
            - Explain limitations when using data in developing inventories (e.g., a single pollutant being counted in more than one definition)
            - Explain the geographic areas covered by inventories
            - Identify the time scales covered by inventories (such as annual and seasonal)
            - Explain the spatial resolution options for emission inventories
            - Explain the temporal resolution options for emission inventories

8. New e-learning module – The Primary Types of Emissions Inventories (in FY 2024, this module will be bundled to form a course with eight other modules developed from FY 2021-2024)
    - Curricula: Air Pollution Basics, Emissions Inventories
    - Curricula Learning Objectives:
        - Air Pollution Basics
            - Describe the basic principles for emissions inventories
        - Emissions Inventories (Foundational)
            - Explain the types of emissions inventories and their purposes
    - Delivery Method: e-learning
    - Need for Content Expressed By: MJOs, EPA OAQPS
    - Module Learning Objectives:

- Explain the types of emissions inventories EPA develops (NEI, TRI, GHG – including GHGRP vs. GHG inventory)
  - Describe the major differences between the NEI and TRI and GHG inventories
  - Explain the use of TRI and GHGRP data to gap fill NEI
- Identify what inventories state, local and tribal air agencies develop, e.g. SIP/TIP inventories
- Explain projected inventories
  - Identify a national projected inventory (such as NEI)
  - Identify state projected inventories (such as SIP inventories)
- Explain the types of emission estimates found in emissions inventories
  - Define key terms (actual emissions, allowable (permitted) emissions, potential emissions)

9. New e-learning module on Basic Principles of Source Emissions Testing and Source Emissions Monitoring
   - Curriculum: Air Pollution Basics
   - Curriculum Learning Objective:
     - Describe the basic principles for source testing and source monitoring
   - Delivery Method: e-learning
   - Need for Content Expressed By: EPA Inspector General, EPA OAQPS, states, MJOs
   - Module Learning Objectives:
     - Explain why source testing is important
     - Describe the differences between source monitoring is different from ambient air monitoring
     - Explain how source test methods generally work

Air Quality Planning

10. New e-learning course on Components of Attainment SIPs/TIPs
    - Curriculum: Air Quality Planning
    - Curriculum Learning Objective (foundational):
      - Describe the contents of attainment area SIPs/TIPs
    - Delivery Method: e-learning
    - Need for Content Expressed By: EPA Regional Offices, EPA OAQPS
    - Course Learning Objectives:
      - Explain each of the components of attainment state and tribal implementation plans (SIPs and TIPs) that are common across pollutants
        - Emission inventories
        - Identification of existing federal and local control measures
        - Evaluation of new control measures
        - Air quality modeling
        - Enforceable regulations to be adopted into the attainment SIP/TIP
        - Plan for reasonable further progress (RFP)
        - Contingency measures

Air Toxics

11. New e-learning course on Air Toxics Risk Communication
    - Curricula: Air Toxics, Air Pollution Basics
    - Curricula Learning Objectives:
      - Air Pollution Basics
        - Describe the health assessment components of the air toxics program
          - Risk communication

- Air Toxics
  - Advanced
    - Execute effective risk communication
      - Best practices for effective risk communication
      - Involving the public in risk communication, especially affected communities

- Delivery Method: e-learning
- Need for Content Expressed By: EPA OAQPS, EPA Regional Offices
- Course-Level Learning Objectives:
  - Explain why risk communication is important
  - Highlight key risk communication principles
  - Describe tips regarding written and verbal communications
  - Describe audiences that receive government risk communications
  - Explain challenges related to the communication of risk information
  - Describe community engagement case studies including public meeting examples

Ambient Air Monitoring

12. New foundational-level e-learning module on Air Toxics Monitoring (Module 3: Ambient Air Toxics Monitoring: How is it Different from Ambient Criteria Pollutant Monitoring?)
    - Curricula: Ambient Air Monitoring, Air Toxics
    - Curricula Learning Objective:
      - Explain ambient air monitoring for air toxics
    - Delivery Method: e-learning
    - Need for Content Expressed By: EPA OAQPS
    - Module Learning Objective:
      - Explain the key programmatic difference between ambient air toxics monitoring and ambient criteria pollutant monitoring
    - Additional Notes:
      - This module will be combined six others in FY 2022 to form a foundational-level course. Two modules were completed in FY 2021 (What are Air Toxics? and What are the Sources of Air Toxics) and five will be completed in FY 2022 (Ambient Air Toxics Monitoring: How is it Different from Ambient Criteria Pollutant Monitoring?, Why Monitor Ambient Air Toxics?, Basic Considerations for Development of an Ambient Air Monitoring Network, EPA's Air Toxics Monitoring Program, Measurement of Air Toxics at the National Air Toxics Trends Stations (NATTS) Network).

13. New foundational-level e-learning module on Air Toxics Monitoring (Module 4: Why Monitor Ambient Air Toxics?)
    - Curricula: Ambient Air Monitoring, Air Toxics
    - Curricula Learning Objective:
      - Explain ambient air monitoring for air toxics
    - Delivery Method: e-learning
    - Need for Content Expressed By: EPA OAQPS
    - Module Learning Objective:
      - Explain the objectives of monitoring air toxics
    - Additional Notes:
      - This module will be combined six others in FY 2022 to form a foundational-level course. Two modules were completed in FY 2021 (What are Air Toxics? and What are the Sources of Air

Toxics) and five will be completed in FY 2022 (Ambient Air Toxics Monitoring: How is it Different from Ambient Criteria Pollutant Monitoring?, Why Monitor Ambient Air Toxics?, Basic Considerations for Development of an Ambient Air Monitoring Network, EPA's Air Toxics Monitoring Program, Measurement of Air Toxics at the National Air Toxics Trends Stations (NATTS) Network).

14. New foundational-level e-learning module on Air Toxics Monitoring (Module 5: Basic Considerations for Development of an Ambient Air Monitoring Network)
    - Curricula: Ambient Air Monitoring, Air Toxics
    - Curricula Learning Objective:
        - Explain ambient air monitoring for air toxics
    - Delivery Method: e-learning
    - Need for Content Expressed By: EPA OAQPS
    - Module Learning Objective:
        - Explain the basic considerations for developing an ambient air monitoring network of sites for a criteria pollutant or hazardous air pollutant, consistent with monitoring objectives
    - Additional Notes:
        - This module will be combined six others in FY 2022 to form a foundational-level course. Two modules were completed in FY 2021 (What are Air Toxics? and What are the Sources of Air Toxics) and five will be completed in FY 2022 (Ambient Air Toxics Monitoring: How is it Different from Ambient Criteria Pollutant Monitoring?, Why Monitor Ambient Air Toxics?, Basic Considerations for Development of an Ambient Air Monitoring Network, EPA's Air Toxics Monitoring Program, Measurement of Air Toxics at the National Air Toxics Trends Stations (NATTS) Network).

15. New foundational-level e-learning module on Air Toxics Monitoring (Module 6: EPA's Air Toxics Monitoring Program)
    - Curricula: Ambient Air Monitoring, Air Toxics
    - Curricula Learning Objective:
        - Explain ambient air monitoring for air toxics
    - Delivery Method: e-learning
    - Need for Content Expressed By: EPA OAQPS
    - Module Learning Objective:
        - Describe each of the key activities of the EPA's ambient air toxics monitoring program
    - Additional Notes:
        - This module will be combined six others in FY 2022 to form a foundational-level course. Two modules were completed in FY 2021 (What are Air Toxics? and What are the Sources of Air Toxics) and five will be completed in FY 2022 (Ambient Air Toxics Monitoring: How is it Different from Ambient Criteria Pollutant Monitoring?, Why Monitor Ambient Air Toxics?, Basic Considerations for Development of an Ambient Air Monitoring Network, EPA's Air Toxics Monitoring Program, Measurement of Air Toxics at the National Air Toxics Trends Stations (NATTS) Network).

16. New foundational-level e-learning module on Air Toxics Monitoring (Module 7: Measurement of Air Toxics at the National Air Toxics Trends Stations (NATTS) Network)
    - Curricula: Ambient Air Monitoring, Air Toxics
    - Curricula Learning Objective:
        - Explain ambient air monitoring for air toxics
    - Delivery Method: e-learning

- Need for Content Expressed By: EPA OAQPS
- Module Learning Objective:
    - Explain measurement of different air toxics compounds at the NATTS Network
- Additional Notes:
    - This module will be combined six others in FY 2022 to form a foundational-level course. Two modules were completed in FY 2021 (What are Air Toxics? and What are the Sources of Air Toxics) and five will be completed in FY 2022 (Ambient Air Toxics Monitoring: How is it Different from Ambient Criteria Pollutant Monitoring?, Why Monitor Ambient Air Toxics?, Basic Considerations for Development of an Ambient Air Monitoring Network, EPA's Air Toxics Monitoring Program, Measurement of Air Toxics at the National Air Toxics Trends Stations (NATTS) Network).

Emissions Inventories

17. New e-learning module – Key Sources of Data Needed to Build Emissions Inventories (in FY 2024, this module will be bundled to form a course with eight other modules developed from FY 2021-2024)
    - Curriculum: Emissions Inventories
    - Curriculum Learning Objective (Foundational):
        - Describe sources of data for building emissions inventories
    - Delivery Method: e-learning
    - Need for Content Expressed By: EPA OAQPS, EPA Regional Offices
    - Module Learning Objectives:
        - Explain what activity data are
            - Define key terms (activity data, population of county, EIA)
            - Identify other sources
        - Identify what general information is available on source categories at EPA or elsewhere
            - Explain what AP-42 background write-ups are
        - Locate where to find emission factors or speciation data
            - Provide examples of what emission factor documents are available
            - Identify SPECIATE and its uses
            - Explain what databases are available (e.g. Webfire)
            - Explain source testing data for compliance purposes
            - Identify the purpose of Safety Data Sheets
            - Explain literature searches
        - Locate information on facilities
            - Identify EPA databases such as ICIS air
            - Identify permit databases
        - Explain the main ways that the availability of resources might affect emissions inventory development

Permitting

18. New e-learning course – New Source Review
    - Curriculum: Permitting
    - Curriculum Learning Objective (Foundational): to be determined – will focus on foundational learning objectives associated with the New Source Review Program
    - Delivery Method: e-learning
    - Need for Content Expressed By: MJOs, EPA Regional Offices
    - Module Learning Objectives: to be determined by EPA in consultation with MJOs

19. New e-learning course on New Source Review: Prevention of Significant Deterioration (PSD) Applicability
    - Curriculum: Permitting
    - Curriculum Learning Objectives:
        - Define major NSR permit applicability requirements
            - Major Source applicability
                - NNSR applicability procedures
                - PSD applicability procedures
                - Reactivation of a permanently shutdown facility
                - Excess Emissions During Periods of Startup, Shutdown, or Malfunction
                - Relaxing Limits to Avoid Major NSR (e.g., 40 CFR 52.21(r)(4); 40 CFR §51.165(a)(5)(ii))
            - Major Modification applicability
                - Significant Emission Rates (SERs)
                - Exclusions from Modification – RMRR, hours of operation, etc.
                - Applicability procedures for modifying existing emission units, adding new emission units, and "Replacement Units"
                - Step 1: Significant Emissions Increase Calculation (Project Emissions Accounting)
                - Step 2: Significant Net Emissions Increase (Contemporaneous Netting)
            - Plant-wide Applicability Limitation (PAL) permits
                - Establishing an Actuals PAL – setting the limit; contents of the PAL permit; effective period
                - Other PAL actions: renewing, expiring, reopening, adjusting, increasing, terminating, etc.
    - Delivery Method: e-learning
    - Need for Content Expressed By: MJOs, EPA OAQPS, EPA Regional Offices
    - Course Learning Objectives:
        - Explain the structure of the Clean Air Act Title 1 programs.
        - Identify the goals and requirements of the PSD program.
        - Define PSD applicability criteria
        - Define key terms
            - new PSD source
            - modification
            - emissions unit
        - Describe the PSD applicability process for new sources.
        - Define the various sources for PSD regulations and the major source applicability thresholds.
        - Identify the criteria pollutants and the non-criteria pollutants in the regulated NSR category according to their emission rate.
        - Explain the process of PSD applicability for major modifications.
        - Apply two-step applicability test for major modifications
        - Explain how sources can avoid PSD review
        - Explain the process of PSD applicability for emissions unit

20. New e-learning course on New Source Review: Control Cost Analysis
    - Curricula: Air Pollution Basics, Air Quality Planning, Air Toxics
    - Curricula Learning Objectives:
        - Air Pollution Basics
            - Describe common engineering practices and technologies used to control or minimize air pollutant impacts

- Air Quality Planning
  - Analyze and plan control measures for SIPs (i.e. RACT/RACM)
    - Compare RACT/RACM, BACT/BACM, MSM
    - RACT analysis approvability issues (sector- and source-specific)
    - Case studies, including different state examples, some of which may have requirements that are more stringent than EPA's
- Air Toxics
  - Explain the process for conducting RTRs
    - Evaluation of control options and economic considerations

- Delivery Method: e-learning
- Need for Content Expressed By: MJOs, EPA OAQPS, EPA Regional Offices
- Course Learning Objectives: to be determined

FY 2023

The AirKnowledge team anticipates completing up to 20 training materials in FY 2023. These development efforts will be led by EPA for up to 16 of these materials, and by the MJOs for up to four of these materials (with subject matter expert review coordinated by EPA). The anticipated list of topics that will be addressed in FY 2023 includes the following:

Air Pollution Basics

1. Air Pollution Basics Overview Course (instructor-led, for virtual instruction; course will replace APTI 452: Principles and Practices of Air Pollution)
    - Curriculum: Air Pollution Basics
    - Curriculum Learning Objectives:
        - Identify key historic episodes and events that led to the passage of air pollution control legislation
        - Highlight air pollution control successes since the 1970 passage of the CAA
        - List and describe the types of air pollutants regulated under the CAA
        - Generally describe the sources of air pollution
        - Explain the health and environmental effects of air pollutants
        - Explain basic concepts in environmental science related to air pollution
        - Describe common engineering practices and technologies used to control or minimize air pollutant impacts
        - Outline relevant information in the CAA
        - Outline the steps in the National Ambient Air Quality Standards (NAAQS)-setting process
        - Explain implementation of the NAAQS
        - Define operating permit and New Source Review programs
        - Describe the basic principles for ambient air monitoring
        - Describe the basic principles for emission inventories
    - Delivery Method: Virtual instructor-led
    - Need for Updated Content Expressed By: EPA OAQPS, MJOs, NOWCC instructors
    - Course Learning Objectives: to be determined

2. New instructor-led course (for in person instruction) - Working With Tribes
    - Curricula: Air Pollution Basics, Air Quality Planning
    - Curricula Learning Objectives:
        - Air Pollution Basics
            - Explain implementation of the NAAQS
                - Roles of state, local and tribal air agencies
                - State and Tribal Implementation Plans (SIPs and TIPs)
                - The Tribal Air Rule and Treatment As a State for tribes
            - List ways the public can participate in the regulatory process
                - Opportunities for public comment at the federal, state and local levels
                - Tribal outreach and consultation
        - Air Quality Planning
            - Describe NAAQS implementation (in general)
                - Roles of states, tribes, local air agencies and EPA
            - Describe the requirements and process to designate areas as attainment, nonattainment, or attainment/unclassifiable following promulgation of a new or revised NAAQS
                - Federal/state/tribal relationship in area designations
                    - Tribal policy for designation as a separate area
    - Delivery Method: in person instructor-led

- Need for Content Expressed By: EPA OAQPS, EPA Regional Offices
- Course Learning Objectives:
    - Federal Indian Law: *Understanding Jurisdiction, the Federal Trust Responsibility, Tribal Treaty Rights and Legal Issues Regarding Implementation of EPA Programs in Indian Country*
    - Respecting Cultural Identity and Tribal Sovereignty
    - Opportunities for tribes to participate in the regulatory process
        - Outreach
        - Consultation – overview of EPA's consultation policy
        - Public comments and hearings

3. New e-learning module on Meteorology and Topography
    - Curriculum: Air Pollution Basics
    - Curriculum Learning Objectives:
        - Explain basic concepts in environmental sciences related to air pollution
            - Atmospheric science
                - Overview of basic meteorology and atmospheric chemistry
            - Basics of interactions between meteorology and air pollution
    - Delivery Method: e-learning
    - Need for Content Expressed By: MJOs, EPA OAQPS
    - Module Learning Objectives:
        - Define key terms related to meteorology and topography
        - List meteorological factors that are important to the distribution and transport of air pollutants
        - Identify topographical factors that are important to the distribution and transport of air pollutants

4. New e-learning module - Ambient Air Quality Monitoring
    - Curriculum: Air Pollution Basics
    - Curriculum Learning Objectives:
        - Describe the basic principles for ambient air monitoring
            - Objective for use of monitoring data
            - What is measured in the ambient air
                - Particles
                - Gases
                - Meteorology
            - Location for EPA monitoring requirements
            - Meteorological impacts on ambient air measurements
            - How the CAA defines ambient air and what must be measured
                - Criteria pollutants
                - HAPs
            - Measurement Methods
                - Federal Reference Methods
                - Federal Equivalent Methods
                - Non-regulatory methods
            - Quality assurance in using ambient air monitoring data
    - Delivery Method: e-learning
    - Need for Content Expressed By: MJOs
    - Module Learning Objectives:
        - Define ambient air monitoring terms
        - Identify the goals of ambient air monitoring

- Explain the objectives of an ambient air monitoring network
- List the pollutants measured by ambient air monitors
- Identify the entities responsible for ambient air monitoring
- Locate the regulations related to ambient air monitoring
- Describe examples of quality assurance and quality control
- Explain the difference between the FRM and the FEM
- Explain the need for methods to assure data quality

5. New e-learning module - Clean Air Act Regulatory Program for Air Toxics (NESHAP, GACT, MACT, residual risk)
   - Curriculum: Air Pollution Basics
   - Curriculum Learning Objective:
     - Define the air toxics control program: MACT, GACT, residual risk
   - Delivery Method: e-learning
   - Need for Content Expressed By: MJOs
   - Module Learning Objectives:
     - Identify the main sections of the Clean Air Act that mandate the regulation of criteria pollutant vs. air toxics
     - Define key terms related to the air toxics control program
     - Summarize the relationship between the components of the air toxics control program

6. New e-learning module – National Emissions Inventory
   - Curricula: Air Pollution Basics, Emissions Inventories
   - Curricula Learning Objectives:
     - Air Pollution Basics
       - Describe the basic principles for emissions inventories
     - Emissions Inventories (Foundational)
       - Describe the goals, purpose and uses of the National Emissions Inventory
   - Delivery Method: e-learning
   - Need for Content Expressed By: MJOs, EPA OAQPS
   - Module Learning Objectives:
     - Explain what the National Emissions Inventory is
     - Describe the goals of the National Emissions Inventory
     - Explain the purpose of the National Emissions Inventory
     - List the main uses for the National Emissions Inventory

<u>Air Quality Planning</u>

7. New high-level e-learning course on Area Designations
   - Curriculum: Air Quality Planning
   - Curriculum Learning Objective (foundational):
     - Describe the requirements and process to designate areas as attainment, nonattainment, or attainment/unclassifiable following promulgation of a new or revised NAAQS
   - Delivery method: e-learning
   - Need for Content Expressed By: EPA Regional Offices
   - Course Learning Objectives:
     - Define key terms associated with initial area designations and classifications
     - Describe the CAA requirements associated with designations
     - Explain the factors analyzed to determine area boundaries, including the uses for modeling and monitoring data

- Describe the relative roles of the EPA, states, and tribes with regard to area designations
- Broadly outline the exceptional events process
- Explain the main steps and deadlines in the designation process
- Identify the location of current designations in the CFR and Greenbook

Emissions Inventories

8. New e-learning module – Emissions Inventory Development
   - Curriculum: Emissions Inventories
   - Curriculum Learning Objectives (Intermediate):
     - Identify priority source categories for inventory review and development
     - Employ emissions data available on EPA's inventory homepage
   - Delivery method: e-learning or distance learning
   - Need for Content Expressed By: EPA OAQPS, EPA Regional Offices
   - Course Learning Objectives:
     - Identify the steps for developing emissions inventories
       - Identify the steps employed in the top-down approach for developing inventories
       - Identify the steps employed in the bottom-up approach for developing inventories
     - Explain the meaning of emissions factor times activity
     - Generally describe what emission factors are
     - Explain what is done when there are no immediately available emission factors for a source category
     - Explain what speciation data are
     - Define what activity data are
     - Define what a mass balance is
     - Describe source testing, in general
     - Define emission estimation models
       - Describe how a survey may be used to estimate emissions
     - Identify how engineering judgment may be used for estimating emissions
     - Identify the purpose of CEMS data
     - Identify the need for QA/QC and when this is necessary

9. New e-learning module – Development of the National Emissions Inventory
   - Curriculum: Emissions Inventories
   - Curriculum Learning Objectives (Intermediate):
     - Apply the Air Emissions Reporting Requirement (AERR) Rule (purpose of the EI)
     - Select Emissions Inventory Reporting Tiers and Codes
     - Employ emissions data available on EPA's inventory homepage
     - Employ the Emissions Inventory System (EIS)
   - Delivery method: e-learning or distance learning
   - Need for Content Expressed By: EPA OAQPS, EPA Regional Offices
   - Course Learning Objectives:
     - Identify the primary sources of data for the NEI
     - Describe the overall process for how the NEI is developed
       - Identify the major steps in the process
       - Explain the states' roles in the process
         - Identify the reporting requirements for state air agencies
         - Identify the emissions thresholds set by EPA under the Air Emissions Reporting Rule (AERR)
         - Describe the states' role in the submittal of data to the EIS repository through the Central Data Exchange (CDX)
       - Explain EPA's role in the process

        - Identify what data manipulations the Emissions Inventory System (EIS) performs in the process
    - Summarize how data gaps are filled in the NEI
        - Explain and contrast how the TRI and GHG inventories fill those gaps
        - Indicate what other techniques are used to fill gaps
            - Risk and Technology Review (RTR) Modeling and files used to enhance NEI/TRI data

Permitting

10. New e-learning course - Title V Permitting
    - Curriculum: Permitting
    - Curriculum Learning Objectives: to be determined – will focus on foundational learning objectives associated with the Title V Program
    - Delivery Method: e-learning
    - Need for Content Expressed By: MJOs, EPA Regional Offices
    - Course Learning Objectives: to be determined by EPA in consultation with MJOs

11. New e-learning course on New Source Review – Project Aggregation
    - Curriculum: Permitting
    - Curriculum Learning Objectives:
        - Define major NSR permit applicability requirements
            - Major Modification applicability
                - Step 1: Significant Emissions Increase Calculation (Project Emissions Accounting)
                    - Project Aggregation
    - Delivery Method: e-learning
    - Need for Content Expressed By: MJOs, EPA OAQPS, EPA Regional Offices
    - Course Learning Objectives:
        - Describe how PSD and NNSR regulations define modification applicability
        - Explain the history of what led to development of the 2006 project aggregation rulemaking
        - Define technical dependence as defined in the 2006 Proposed rule preamble
        - Define economic dependence as defined in the 2006 Proposed rule preamble
        - Describe changes in the 2006 Proposed rule preamble for the regulatory definition of "Project"
        - Describe how the policy for Aggregation and Project Netting was implemented in the 2009 Final Rule
        - Explain the requirements for a Substantial Relationship in the 2018 Final Rule (Aggregation; Reconsideration):
            - Technical dependence
            - Economic dependence
            - Complementary relationship
                - Provide examples of determinations

12. New course on New Source Review - Best Available Control Technology (BACT)
    - Curriculum: Permitting
    - Curriculum Learning Objectives (foundational):
        - Outline the NSR permitting processes
        - Define major NSR permit requirements

        - PSD permit requirements
            - Top Down BACT
- Delivery Method: e-learning
- Need for Content Expressed By: MJOs, EPA OAQPS, EPA Regional Offices
- Course Learning Objectives:
    - List the key elements of BACT
    - Explain considerations for the BACT review process
    - Define the top down BACT process
    - List the 5 steps of the BACT process
    - Describe the scope of a BACT analysis
    - Apply the 5 steps of the BACT process
        - Identify all available control technologies
        - Eliminate technically infeasible options
        - Rank remaining control technologies
        - Evaluate most effective control technologies & document results
        - Select BACT
    - List the other pollutant specific consideration for BACT with respect to greenhouse gases
    - Demonstrate the steps required in the process for BACT for greenhouse gas controls

Source Emissions Testing and Source Emissions Monitoring

13. New e-learning module on Stack Testing – Statutory and Regulatory Provisions
    - Curriculum: Source Emissions Testing and Source Emissions Monitoring
    - Curriculum Learning Objectives (foundational):
        - Describe the sections of the Clean Air Act and the Code of Federal Regulations that include emission test methods and monitoring requirements for stationary sources
        - Locate specific source test methods in the CFR
    - Delivery Method: e-learning
    - Need for Content Expressed By: EPA Inspector General, EPA OAQPS, states, MJOs
    - Module Learning Objectives:
        - Explain how the following Clean Air Act sections relate to source emissions testing and source emissions monitoring:
            - CAA section 110 SIPs and TIPs (40 CFR Parts 51 and 52)
            - CAA section 111 Standards of Performance for New Stationary Sources (40 CFR Parts 60 and 62)
            - CAA section 112 Hazardous Air Pollutants (40 CFR Parts 61 and 63)
            - CAA section 129 Solid Waste Combustion (40 CFR Parts 60 and 62)
            - CAA section 301 General Provisions – Administration (delegation of authority, including Tribal authority)
            - CAA section 401 Acid Deposition Control (40 CFR Parts 72 and 75)
        - Identify the regulatory provisions associated with source emissions testing and source emissions monitoring (noted above)

14. New e-learning module on Stack Testing – Navigating EPA Resources
    - Curriculum: Source Emissions Testing and Source Emissions Monitoring
    - Curriculum Learning Objective (foundational):
        - Locate specific source test methods in the CFR
    - Delivery Method: e-learning
    - Need for Content Expressed By: EPA Inspector General, EPA OAQPS, states, MJOs
    - Module Learning Objectives:

- Explain how to navigate the resources located on EPA's Air Emission Measurements Center website (https://www.epa.gov/emc)

15. New e-learning module on Stack Testing: Methods
    - Curriculum: Source Emissions Testing and Source Emissions Monitoring
    - Curriculum Learning Objective:
        - Identify the primary procedures for Test Methods 1-5 and Method 19 (these are core methods for most tests) and describe why they are important and their limitations
    - Delivery Method: e-learning
    - Need for Content Expressed By: EPA Inspector General, EPA OAQPS, states, MJOs
    - Course Learning Objectives:
        - Describe the four types of stack testing: manual, instrumental, visible emissions, and visual opacity
        - Generally describe how to conduct stack tests and conduct calculations per EPA Test Methods 1-5
            - Sampling location and number specifications (Method 1 and 1a)
            - Flow rate in a stack (Method 2 series)
            - Molecular weight for a stack test (Method 3 series)
            - Moisture in a stack (Method 4)
            - Particulate matter measurement (Method 5 series, Method 17)
            - Calculate volumetric flow rates, stack velocity, and percent isokinetic
            - Account for acetone blanks
            - Performance of post-test calibration checks
            - Conducting post-test leak checks

16. New e-learning module on Stack Testing: Audits and Review
    - Curriculum: Source Emissions Testing and Source Emissions Monitoring
    - Curriculum Learning Objectives:
        - Apply the basic principles for observing stack tests/conducting audits
        - Review completed source test reports
    - Delivery Method: e-learning
    - Need for Content Expressed By: EPA Inspector General, EPA OAQPS, states, MJOs
    - Course Learning Objectives:
        - Generally explain stack testing and auditing principles
            - Basics of observing a stack test
            - Check lists for source test observations
            - How to conduct audits of continuous emission monitoring system (CEMS) and for a stack test, based on the particular test method or procedure
            - Identifying key parameters to watch on the source side during the test to ensure the operating conditions of the source are representative during testing runs and ensure emission as tested by the reference method can be translated into proper emission factors or operating limits.
        - Describe the components of test reports and analysis reports and the requirements for each component
            - Filter and probe temperature
            - Calibration information
            - Probe length
        - Explain how test reports are reviewed
            - Deviations, modifications, omissions (what went wrong and why)
            - How to use consistency to identify testing problems
            - Example equations and verifying calculations

- Lab data
- Using EPA's electronic reporting tool (ERT) to review and enter data
  - Calculational errors generally avoided by using the ERT
- Identify common errors
- Discuss SLT/EPA/IG identified deficiencies/enforcement cases
  - Tester assumed "gr/ton" was grams/ton instead of grains/ton – facility failed source test and decided to shut down instead of install controls
- When are results "good enough" for compliance?

EPA Review of Air Quality Courses Developed or Updated by MJOs: The AirKnowledge team also anticipates coordinating EPA review of up to four courses developed or updated by MJOs in FY 2023. Whether and when within 2023 EPA will conduct a review will depend on subject matter expert availability and whether the content is largely within the scope of the curricula.

FY 2024

The AirKnowledge team anticipates completing up to 20 training materials in FY 2024. These development efforts will be led by EPA for up to 15 of these materials, and by the MJOs for five of these materials (with subject matter expert review coordinated by EPA). The anticipated list of topics that will be addressed in FY 2024 includes the following:

Air Pollution Basics

1. New e-learning module on Nonattainment Area Requirements
   - Curriculum: Air Pollution Basics
   - Curriculum Learning Objective:
     - Explain implementation of the NAAQS
   - Delivery method: e-learning
   - Need for Content Expressed By: MJOs, EPA OAQPS
   - Course Learning Objectives:
     - Broadly explain the requirements that apply to areas designated nonattainment for any of the NAAQS (not specific to particular pollutants)

2. New e-learning course on Air Toxics Risk Assessment
   - Curriculum: Air Pollution Basics
   - Curriculum Learning Objectives:
     - Explain basic concepts in environmental sciences related to air pollution
       - Atmospheric science
         - Scientific evaluation of health and environmental impacts of air pollution
           - Dose/response
           - Epidemiological data versus controlled studies
           - Acute versus chronic effects
     - Describe the health assessment components of the air toxics program
       - Assessment of risk
       - Estimates of air toxics public health risks
         - Cancer
         - Non-cancer
   - Delivery method: e-learning
   - Need for Content Expressed By: MJOs, EPA OAQPS
   - Course Learning Objectives:
     - Define key terms relating to risk assessment
     - Describe the risk assessment process – hazard identification, exposure analysis, dose-response analysis, risk characterization
     - List and describe acute and chronic health and environmental effects
     - List and describe cancer and non-cancer health outcomes
     - Explain the differences between and general uses for epidemiological data and controlled studies

3. New e-learning course on Environmental Justice
   - Curriculum: Air Pollution Basics
   - Curriculum Learning Objective:
     - Identify basic issues related to environmental justice
   - Delivery method: e-learning
   - Need for Content Expressed By: MJOs, EPA OAQPS
   - Course Learning Objectives:

- Define key terms relating to environmental justice
- Generally describe the history of the environmental justice movement
- List and describe laws and executive orders that relate to environmental justice and direct EPA's work to consider and address environmental justice concerns
- List and describe examples of EPA air programs that integrate consideration of environmental justice, such as:
    - Setting standards
    - Permitting facilities
    - Awarding grants
    - Regulations
    - Reviewing proposed actions

Air Quality Planning

4. New e-learning course on Redesignation Process and Maintenance Plans
    - Curriculum: Air Quality Planning
    - Curriculum Learning Objectives:
        - Describe redesignation from nonattainment to attainment, and maintenance plan requirements
            - Basis in CAA (section 175A)
            - Clean data determinations (CDD)
            - Requirements to be met for an area to be redesignated from nonattainment to attainment
            - Requirements for an approvable maintenance plan, including contingency measures
            - Differences in process for tribes (e.g., TAS approval, etc.)
    - Delivery Method: e-learning
    - Need for Content Expressed By: EPA Regional Offices, states
    - Course Learning Objectives:
        - Define key terms associated with redesignation and maintenance plans
        - Explain the difference between initial designations and redesignation
        - Identify the statutory and regulatory requirements associated with redesignation and maintenance plans
        - Explain the CDD process
        - Explain the requirements that must be met in order for an area to be redesignated
        - Describe the redesignation process, including state/EPA roles
        - Explain the requirements that must be met in order for a maintenance plan to be approved by EPA
        - Describe the process for getting an approved maintenance plan in place
        - Distinguish between the processes for states vs. tribes

Air Toxics

5. New instructor-led course on Air Toxics Risk Assessment (to replace APTI 400 Introduction to Hazardous Air Pollutants)
    - Curriculum: Air Toxics Rule Development and Implementation
    - Curriculum Learning Objectives:
        - Foundational
            - Summarize how toxicity values are selected and applied for air toxics risk assessments
        - Intermediate
            - Define the key elements of performing a risk analysis
    - Delivery method: instructor-led (for in person instruction)
    - Need for Content Expressed By: EPA OAQPS, MJOs
    - Course Learning Objectives:

- Describe the purpose and details of toxicity assessment in the risk assessment process
- Describe the framework for risk assessment
- Explain the process for developing health benchmarks

6. New e-learning module on Stationary Source Control Technologies: Settling Chambers
   - Curriculum: Air Toxics Rule Development and Implementation
   - Curriculum Learning Objective (intermediate):
     - Summarize the technologies used to control air toxics from stationary sources
   - Delivery method: e-learning
   - Need for Content Expressed By: EPA OAQPS, MJOs, states
   - Course Learning Objectives:
     - Describe settling chambers
     - Explain how settling chambers operate
     - Identify the uses for settling chambers

7. New e-learning module on Stationary Source Control Technologies: Cyclones
   - Curriculum: Air Toxics Rule Development and Implementation
   - Curriculum Learning Objective (intermediate):
     - Summarize the technologies used to control air toxics from stationary sources
   - Delivery method: e-learning
   - Need for Content Expressed By: EPA OAQPS, MJOs, states
   - Course Learning Objectives:
     - Describe cyclones
     - Explain how cyclones operate
     - Identify the uses for cyclones

8. New e-learning course on Stationary Source Control Technologies: Fabric Filters (Baghouses)
   - Curriculum: Air Toxics Rule Development and Implementation
   - Curriculum Learning Objective (intermediate):
     - Summarize the technologies used to control air toxics from stationary sources
       - Fabric filters (baghouses)
   - Delivery method: e-learning
   - Need for Content Expressed By: EPA OAQPS, MJOs, states
   - Course Learning Objectives:
     - Describe fabric filters
     - Explain how fabric filters operate
     - Identify the uses for fabric filters

9. New e-learning course on Stationary Source Control Technologies: Electrostatic Precipitators (ESPs)
   - Curriculum: Air Toxics Rule Development and Implementation
   - Curriculum Learning Objective (intermediate):
     - Summarize the technologies used to control air toxics from stationary sources
       - Electrostatic precipitators
   - Delivery method: e-learning
   - Need for Content Expressed By: EPA OAQPS, MJOs, states

- Course Learning Objectives:
  - Describe electrostatic precipitators
  - Explain how electrostatic precipitators operate
  - Identify the uses for electrostatic precipitators

Emissions Inventories

10. New e-learning course on Emission Factors (AP-42, WebFIRE, other emission factor resources)
    - Curricula: Emissions Inventories, Air Quality Planning, Air Toxics Rule Development and Implementation, Source Emissions Testing and Source Emissions Monitoring
    - Curricula Learning Objectives:
      - Emissions Inventories Curriculum (intermediate)
        - Describe how EPA develops Emissions Factors using the Emissions Factors Procedure document
      - Air Quality Planning (intermediate)
        - Define attainment demonstrations
          - Analyze emission inventories (especially for nonattainment areas)
            - Describe how EPA emission factors are developed
      - Air Toxics Curriculum (intermediate)
        - Describe how emission factors are developed and where they can be found
          - Sources of emission factors
          - Uncertainty related to emission factors
      - Source Emissions Testing and Source Emissions Monitoring (foundational)
        - Describe sources of data for building emissions inventories
          - WebFIRE (emission factors from stack tests, Electronic Reporting Tool (ERT), WebFIRE template)
    - Delivery method: e-learning
    - Need for Content Expressed By: EPA OAQPS, EPA Regional Offices, states
    - Course Learning Objectives:
      - Explain how emission factors are developed
      - Identify the main types of resources used to locate emission factors
      - Generally explain uncertainty as it relates to emission factors
      - Use WebFIRE to locate relevant emission factors

11. New e-learning module – National Emissions Inventory Data Terminology and Data Summaries
    - Curriculum: Emissions Inventories
    - Curriculum Learning Objectives (Intermediate):
      - Select Emissions Inventory Reporting Tiers and Codes
      - Employ emissions data available on EPA's inventory homepage
      - Employ the Emissions Inventory System (EIS)
      - Identify priority source categories for inventory review and development
    - Delivery method: e-learning
    - Need for Content Expressed By: EPA OAQPS
    - Course Learning Objectives:
      - Identify data terminology (e.g. data category terms) in the NEI and how the data are summarized
        - Define categories (point source, nonpoint, on-road, non-road, events)
        - Compare sources typically treated as point sources vs. sources typically treated as nonpoint sources vs. sources that may overlap between point and nonpoint categories

        - Explain how to avoid double counting for those that overlap
    - Identify other data and source terms in the NEI
    - Define the Source Classification Code (SCC); explain how to find SCCs
    - Define the term "sector" (a grouping of related SCCs), including examples
    - Define the term "Tier", including examples

12. New e-learning module – Methods for Accessing National Emissions Inventory Data
    - Curriculum: Emissions Inventories
    - Curriculum Learning Objectives:
        - (Intermediate) Employ the Emissions Inventory System (EIS)
    - Delivery method: e-learning
    - Need for Content Expressed By: EPA OAQPS
    - Course Learning Objectives:
        - Describe the common electronic methods used to access NEI data
            - Define the Click Tool (NEI data)
            - List emissions data that are available through EIS (NEI data)
            - Describe how to access data through the EPA NEI website (NEI data)
            - List other emissions modeling websites available to modeling professionals (e.g. ECHO) (lists NEI and other data)
            - Explain how to access and download code tables.

Permitting

13. New Source Review: Plantwide Applicability Limits (PALs)
    - Curriculum: Permitting
    - Curriculum Learning Objectives:
        - Foundational - Outline the types of NSR permits and basic requirements for each
            - Other permitting options
                - Plantwide applicability limitations (PALs)
        - Intermediate – Define major NSR permit applicability requirements
            - Plant-wide Applicability Limitation (PAL) permits
                - Establishing an Actuals PAL – setting the limit; contents of the PAL permit; effective period
                - Other PAL actions: renewing, expiring, reopening, adjusting, increasing, terminating, etc.
                - Monitoring, recordkeeping, reporting
    - Delivery method: e-learning
    - Need for Content Expressed By: EPA OAQPS, MJOs
    - Course Learning Objectives: to be determined

14. Title V Permitting: Advanced Topics for Permit Writers
    - Curriculum: Permitting
    - Curriculum Learning Objectives (Advanced):
        - Write effective Title V permits, per example scenarios
            - Writing clear, unambiguous permit conditions
            - Statement of Basis preparation
            - Public participation
            - Response to comments (RTC) preparation

    - Apply advanced permitting concepts
        - Permit streamlining
        - Evaluating monitoring adequacy
- Delivery method: e-learning
- Need for Content Expressed By: EPA OAQPS, MJOs
- Course Learning Objectives: to be determined

Source Emissions Testing and Source Emissions Monitoring

15. New e-learning module - Stack Testing (foundational material)
    - Curriculum: Source Emissions Testing and Source Emissions Monitoring
    - Curriculum Learning Objectives:
        - (Additional foundational-level topics, continuing from FY 2022-2023 content. These e-learning modules will provide a basis for the eventual development of an instructor-led course for in person delivery)
    - Delivery Method: e-learning
    - Need for Content Expressed By: EPA Inspector General, EPA OAQPS, states, MJOs
    - Course Learning Objectives: to be determined

EPA Review of Air Quality Courses Developed or Updated by MJOs: The AirKnowledge team also anticipates coordinating EPA review of up to five courses developed or updated by MJOs in FY 2024. Whether and when within 2024 EPA will conduct a review will depend on subject matter expert availability and whether the content is largely within the scope of the curricula.

Share Your Ideas!

Suggestions for training content the AirKnowledge team should consider developing are welcome and can be sent to AirKnowledge@epa.gov. Suggested topics should be within the scope of the AirKnowledge air quality curricula, which can be found on the interim website (https://www3.epa.gov/ttn/apti/Curriculalist.html), and on the Learning Management System for tribal, state, and local air quality officials.

Attachment 1
AirKnowledge FY 2020 Completed Training Materials
(target was 4-5 training materials)

- Updated instructor-led course NACT 350 Basic Inspector Training (February 2020)
- Updated instructor-led course NACT 355 Advanced Inspector Training (February 2020)
- Updated instructor-led course APTI 423 Air Pollution Dispersion Models: The AERMOD Modeling System (May 2020)
- New e-learning course APTI SI-470 Quality Assurance for Air Pollution Measurement Systems (July 2020)
- Updated instructor-led course APTI 474 Continuous Monitoring Systems (May 2020)
- Conversion of old APTI SI course to level 1 e-learning – APTI SI-422 Air Pollution Control Orientation (Fall 2020)
- Conversion of old APTI SI course to level 1 e-learning – APTI SI-460 Introduction to Permitting (Fall 2020)
- Conversion of old APTI SI course to level 1 e-learning – APTI SI-446 Air Pollution Source Inspection (Fall 2020)
- Conversion of old APTI SI course to level 1 e-learning – APTI SI-431 Air Pollution Control Systems for Selected Industries (Fall 2020)
- Conversion of old APTI SI course to level 1 e-learning – APTI SI-437 Air Pollution Control Technology Series (Fall 2020)
- Conversion of old APTI SI course to level 1 e-learning – APTI SI-419A Introduction to Emission Inventories (Fall 2020)
- Conversion of old APTI SI course to level 1 e-learning – APTI SI-409 Basic Air Pollution Meteorology (Fall 2020)
- Conversion of old APTI SI course to level 1 e-learning – APTI SI-434 Introduction to Ambient Air Monitoring (Fall 2020)
- Conversion of old APTI SI course to level 1 e-learning – APTI RE: 100 Basic Concepts in Environmental Sciences (Fall 2020)
- Conversion of old APTI SI course to level 1 e-learning – APTI SI-401 Risk-Based Air Toxics (Fall 2020)
- Conversion of old APTI SI course to level 1 e-learning – APTI SI-473 Beginning Environmental Statistical Techniques (Fall 2020)
- Conversion of old APTI SI course to level 1 e-learning – APTI SI-300 Introduction to Air Pollution Toxicology (Fall 2020)

Attachment 2
AirKnowledge FY 2021 Completed Training Materials
(target was 4-5 training materials)

New User Training:

- New e-learning content and accompanying materials – APTI Navigation and Registering for a Course (along with Student Virtual Training Guide and Changing User Time Zone)

Air Pollution Basics Curriculum:

- New e-learning course – Introduction to the National Ambient Air Quality Standards (NAAQS)
- New e-learning course on NAAQS Implementation consisting of modules on:
  - Area Designations Requirements
  - What is a SIP/TIP?
  - Timeline and Roles for SIP/TIP Submittal
- New e-learning course – Controlling Air Pollution
- New e-learning modules:
  - What are Criteria Pollutants?
  - What are Air Toxics?
  - Sources of Air Pollution
  - History of Air Pollution Control Legislation
  - Structure and Key Provisions of the Clean Air Act
  - NSR Program

Air Toxics Curriculum:

- New e-learning module – What Are the Sources of Air Toxics?

Permitting Curriculum:

- New e-learning course – Setting Enforceable Potential to Emit Limits in New Source Review Permits

Source Emissions Testing and Source Emissions Monitoring Curriculum:

- Updated instructor-led course with materials for both in person and virtual instruction – NACT 221: Introduction to Continuous Monitoring Systems

In addition to the listed content development efforts completed by AirKnowledge in FY 2021, the AirKnowledge team also worked with the EPA OAQPS Air Quality Assessment Division, Emissions Inventory Analysis Group in FY 2021 to develop training materials related to the 2021 National Emissions Inventory (NEI) reporting cycle. These materials relate to learning objectives in the advanced section of the Emissions Inventories curriculum and include:

- Onroad and Nonroad Sources in the NEI
- Use of the Wagon Wheel Tool

A variety of additional training materials related to the current NEI reporting cycle will be completed in FY 2022. These materials will be available on the Learning Management System within the Emissions Inventories curriculum and upon request to Jennifer Snyder (EPA AQAD/EIAG) at snyder.jennifer@epa.gov.

Attachment 3
AirKnowledge FY 2022-2024 Proposed New Content Deliverables
(target is up to 20 new training materials per year)

[See attached spreadsheet]