| Project 7: North American AirNow-International Project | Operating Year(s): 2013–2014 |
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| **Planned Budget for two years: $250,000** <br> **Year 1: $125,000** <br> **Year 2: $125,000** | |
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**Strategic Priority/Objective:** Healthy Communities and Ecosystems

**Project Summary**

The ultimate goal of the project is to improve public health across North America by providing a consistent set of tools to process, share, and publicly disseminate information on air quality within and among the three countries. While the United States and Canada have systems in place, Mexico is now working to unify and connect diverse air pollution monitoring systems around the country by 2015. Building on the successful implementation of AirNow-International (AirNow-I) in the first pilot city (Monterrey, Nuevo León), the connection of these diverse monitoring systems will be made possible through a common information and data management platform.

Standardizing air quality information and linking ambient air monitoring systems will open up vast opportunities to observe, analyze, and share data within each country and among the three countries, as well as facilitate and improve air quality management and emission reductions efforts.

**Short-term Outcomes (at halfway point)**
- Local capacity (e.g., Monterrey) to assist in building capacity in other regions of the country, since the first system will have been successfully operational and sustainable for a year.
- Monterrey begins to share data with AirNow and to use AirNow-Tech for additional tools and analysis, and assistance with public reporting.
- *Sistema Nacional de Información de la Calidad del Aire* (Sinaica) implementation: AirNow-I is established and extensive training on the system happens in 2013. Sinaica begins to establish reliable data feeds from monitoring network and establishes operational capacity.
- Shared data among countries: Monterrey establishes a data feed to AirNow (which would allow all parties to see and utilize the data in AirNow-Tech and/or AirNow Gateway). Once Sinaica has established an operational system, it (Sinaica) would establish a similar data feed to AirNow.

**Long-term Outcomes (by the end of the project)**
- Reliable and consistent data feeds have been established among all three countries.
- An Air Quality Indicator (AQI) is in place for Mexico, parallel to those used in the United States (Air Quality Index) and Canada (Air Quality Health Index).
- An outreach campaign will have successfully educated the Mexican public on the AQI and its ability to impact public health.
- Improved data quality of ambient air monitoring information for public dissemination and use in air quality management planning.
- Improved information for use in developing air quality indices and forecasts throughout North America.

- Two additional large monitoring networks will begin to use the AirNow-I system as the main data exchange mechanism with Sinaica, and the AirNow system community.
- An educational outreach campaign on the public use of the AQI, and TV and newspaper weather reports that include the AQI daily. The States have received information and outreach materials from Sinaica, from which they will reach out to localities.
- Increase in the percentage of valid data received from air quality monitoring networks.

**Longer-term, environmental outcome (post project)**
- Government decision-makers will be able to utilize validated ambient air monitoring data in setting air quality management policies.
- The public will have air quality products and information available and accessible to see where specific emissions are above thresholds and via an Air Quality Index, to make informed decisions regarding their outdoor activities.
- The United States, Mexico and Canada will be able to share ambient air monitoring data, which can be used for each country's modeling of local, regional and national emissions, which, in turn, will inform air quality management decisions aimed at protecting public health.

**Tasks necessary to reach the environmental outcome:**
- Installation of full production version of AirNow-I system, subject to Mexico's procurement of Microsoft SQL, which will pave the way for the implementation phase of AirNow-I with Mexico's Sinaica.
- Review and exchange information on the existing approaches used by the United States, Canada, and Mexico in the development and use of Air Quality Indices to inform the public about air quality conditions and possible health impacts; and providing robust public outreach on the availability of the AQI, what it means, how citizens can access the information, and what they can do—both to protect themselves from poor air quality and to take individual actions that can contribute to emissions reductions.
- Institute additional pilot cities/states needing capacity building for the implementation of the AirNow-I system, dependent upon commitment and resources to sustain the system.
- Exchange information on existing approaches to air quality forecasting.

**Task 1) Installation of full production version of AirNow-I system, subject to Mexico's procurement of required software (i.e., Microsoft SQL), which will pave the way for the implementation phase of AirNow-I with Mexico's Sinaica**

| Subtask | Project outputs | How does the subtask/output move the project towards the environmental outcome | Timing | Budget (activities) |
|---|---|---|---|---|
| 1.1<br><br>Install and test final production version of AirNow-I software at Sinaica; provide training for | Improved air monitoring data and information management system that provides efficient data | As the central repository, Sinaica will receive consistent data from monitoring networks and | 2013 | Year 1: $20,000 |

| data processing and product generation. | exchanges between monitoring networks, enhanced data quality, and reduced data processing times. | feed data into AirNow. | | |
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| 1.2<br><br>Provide training and technical assistance on the use of advanced air quality tools within AirNow-Tech, and share ambient air monitoring information in a standardized manner with public officials domestically and in the United States and Canada, for use in modeling and other analyses and air quality management decision-making, as well as with the public. | Data are shared among the three countries for analytical and decision-making uses. An online system for public access to the monitoring information is available. | Sinaica will have implemented AirNow-I Program, wherein they upload incoming information from monitoring networks throughout the country, and feed it to the AirNow system, and are able to share the data across North America. | 2014/2015 | Year 1:  $20,000<br>Year 2:  $10,000 |

**Task 2) Review and exchange information on the existing approaches used by the United States, Canada, and Mexico in the development, use, and dissemination of air quality indicators (e.g., Air Quality Index, Air Quality Health Index), and air quality forecasts**

| Subtask | Project outputs | How does the subtask/output move the project towards the environmental outcome | Timing | Budget<br>(activities) |
|---|---|---|---|---|
| 2.1<br><br>Build capacity by sharing approaches used in the United States and Canada for air quality forecasting. | Implementation of air quality forecasting tools | Ability to produce reliable forecasts of air pollution episodes for public dissemination and implementation of air management strategies | 2014/2015 | Year 1: $5,000<br>Year 2: $5,000 |

| Subtask | Project outputs | How does the subtask/output move the project towards the environmental outcome | Timing | Budget (activities) |
|---|---|---|---|---|
| 2.2 Collaboratively review and information on the existing approaches used by the United States, Canada, and Mexico in the development and use of air quality indices to inform increased comparability and potential future improvements for more robust air monitoring programs. | Greater comparability and robustness as countries continue to learn from one another. | Robust, comparable programs will allow for and enhance ability to access and analyze ambient air information among the three countries. | 2014/2015 | Year 2: $15,000 |
| 2.3 Inform and educate the public about respective air quality indicators, accessibility, possible health impacts, avoiding exposure and contributing to cleaner air. | Accessible ambient air information to the public through robust air quality indicator programs. | Widespread public availability to ambient air information in the three countries, thus allowing individual decisions on avoiding exposure to poor air quality. | 2014/2015 | Year 2: $15,000 |

**Task 3) Institute additional pilot cities/states for the implementation of the AirNow-I system**

| Subtask | Project outputs | How does the subtask/output move the project towards the environmental outcome | Timing | Budget (activities) |
|---|---|---|---|---|
| 3.1 Evaluate software and hardware infrastructure and network configurations to ensure that all specifications are met for running AirNow-I implementation. | Pilot cities/states that are selected and trained on the use of AirNow-I. | Ensure reliable infrastructure for project implementation. | 2014/2015 | Year 1: $25,000 Year 2: $25,000 |
| 3.2 Conduct AirNow-I's production system | Implementation of AirNow-I system and data sharing | Mexico will now have extensive information | 2014/2015 | Year 1: $35,000 Year 2: $35,000 |

| installation, testing, operations, and training. | amongst domestic areas within Mexico and the three countries for analytical and decision-making uses. | from its monitoring networks flowing into the AirNow system, and is able to share the data across North America. | | |
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| 3.3<br><br>Customize the AirNow-I system for local needs | Make modifications to the AirNow-I system based on Mexico's air quality management and reporting requirements | Use tools within AirNow-Tech and share ambient air monitoring information in a standardized manner with public officials domestically and in the United States and Canada, for use in modeling and other analyses and air quality management decision-making, as well as with the public. | 2014/2015 | Year 1: $20,000<br>Year 2: $20,000 |

**Explain how this project meets the selection criteria adopted by Council in the Strategic Plan (See below)**

*The goal of all projects funded by the CEC will be to support the efforts of the Parties to conserve, protect and/or enhance the North American environment. The following criteria will guide the Secretariat, Working Groups, Committees, and other appropriate officials of the Parties in considering cooperative activities for Council approval under operational plans. These selection criteria do not apply for activities to be funded through the NAPECA grant program.*

- **How does the project contribute to achieving Council's strategic objectives as described within the current Strategic Plan, or as related to other priorities subsequently confirmed by Council?**

This project will pave the way for all three North American countries to feed information from their ambient air monitoring networks to the AirNow system, providing the opportunity to access output by and of any of the three. Officials will have access to the same data/information, enabling them to make informed air quality management decisions, as well as collaborate on cross-border air quality efforts. Furthermore, the project contributes to improving human health through public knowledge of current air quality, their impact and ways to avoid exposure.

- **Are the proposed objectives North American in scope? In other words, how are the proposed results relevant to protecting the environment in North America? (For example, what would Council members announce to the press at the successful completion of this project?)**

The objective of the project is to make ambient air monitoring network data/information available and accessible across North America, enabling decision-makers to work with current input and the public to know the air quality where they live, work or visit.

- **What are the specific, clear and tangible results that will be achieved and how will progress toward each result be measured over time? Identify performance measures to be used to indicate success at reaching all outcomes and/or performance.**

    o Mexico repository for ambient air monitoring data/information

  **Performance Measures**:
  *Short-Term:*
  - Monterrey, Nuevo León, establishes data exchange feed with Sinaica through the AirNow-I system.
  - Monterrey staff is established as a resource for other Networks interested in the implementation of AirNow-I.
  - Monterrey reporting data publicly using AirNow-I's information management system
  - Monterrey shares data with AirNow community
  - Monterrey uses AirNow-Tech for additional tools and analysis.
  - AirNow-I is established in Sinaica and extensive training on the system begins in 2014.
  - In 2014, Sinaica begins to establish data feeds from monitoring network and establishes operational capacity.

  *Long-Term*:
    o Two additional large monitoring networks will begin to use the AirNow-I system
      - Feeds to Sinaica, which will then feed to AirNow system.
      - Increase in the percentage of valid data received from air quality monitoring networks.
    o Mexican AQI:
      - Standardized country wide AQI for use in reporting of air quality information.
      - TV and newspaper weather reports include the AQI daily.
      - Mexican States have received information and outreach materials from Sinaica, from which they will reach out to localities.
    o Data are shared among the three countries for analytical and decision-making uses and online tools available to the public.
      - Increased requests on air quality information from environmental agencies' websites (hits on site)

- **Explain why the CEC is the most effective vehicle for the Parties to undertake the project, considering:**

  o **The value-added of doing it under the CEC cooperative program:**
  o **Any other public, private or social organizations that work on such activities**
  o **Opportunities to cooperate and/or leverage resources with such organizations**

The CEC is best positioned to assist in integrating North American data and information into a single, accessible system, given the familiarity with each of the three countries, country and topical experts, and past projects that may have required similar integration.

- **Does the project propose a clear timeline for implementation of the activities, including a target end date for CEC's involvement? Where applicable, describe how the work will continue after CEC involvement ends.**

This project does include clear timelines for the implementation of project tasks. By the end of the project, AirNow-I will be the main platform for exchanging air quality monitoring information between Sinaica and major monitoring networks. Both Siniaca, as well as other states would have established strong links to the AirNow community in North America, and will be in a position to expand the program to other networks.

- **Where applicable, identify with reasonable specificity:**

  o **Linkages with other relevant CEC projects, past or present, in order to create synergies, capitalize on experience, or avoid duplication**

The scoping and training activities on this project started in December 2009, under the CEC's Enhancing North American Air Quality Management project. It is now moving into the final implementation, with Monterrey as the first Mexican state to fully implement the AirNow-I system in 2012.

  o **The target audience, as well as its receptivity and capacity to use the information that may be produced as a result of the project**

Receptivity of the target audiences and capacity to use the information in the United States and Canada have been excellent. The AQI in the United States has become mainstream and expected by readers and watchers of weather media. The capacity to use the information in Mexico should be similar once the system is in place. We expect receptivity to be high.

- o **The beneficiaries of capacity building activities that the project may include:**

    - Federal, state and local government decision-makers throughout North America
    - Sources, learning how their emissions may be affecting surrounding areas or those further afield.
    - General public, with accessibility to close to real-time information and individual decision tools
    - Academic institutions, with research tools
    - Industry and NGOs, in using the information to make certain cases and to inform constituencies
    - Media, by having AQI available for public to access

- o **The relevant stakeholders, with particular attention to communities, academia, NGOs and industry, and their involvement and contribution to a successful outcome**

    - All of the above, as outlined above