

# **Angeles Link Phase 1 Reasonableness Review**

## **Chapter 4 Workpapers: Air Studies - Greenhouse Gas Emissions Evaluation, Hydrogen Leakage Assessment, and Nitrogen Oxides (NOx) And Other Air Emissions Assessment**

### **I. Introduction**

This workpaper provides details on the prudent and reasonable activities taken to develop the Greenhouse Gas (GHG) Emissions Evaluation (GHG Study), Hydrogen Leakage Assessment (Leakage Study), and Nitrogen Oxides (NOx) and Other Air Emissions Assessment (NOx Study) (collectively, Air Studies) in compliance with Decision (D.) 22-12-055 (Phase 1 Decision).<sup>1</sup> This workpaper details study costs and management and cost control measures. The total loaded cost associated with the Air Studies is \$1.9 million in operating and maintenance (O&M) expenditures for Phase 1 activities.<sup>2</sup>

### **II. Study Costs**

A combination of internal and external resources were utilized to execute the Air Studies. Direct costs for these activities reflect labor costs (e.g., internal personnel) and non-labor costs (e.g., third-party contractors and miscellaneous costs associated with supporting Angeles Link Phase 1 activities).<sup>3</sup> Indirect costs reflect costs for overhead loaders.<sup>4</sup> The total loaded costs for the three studies is \$1.9 million. Table 1 below provides additional cost details.

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<sup>1</sup> Phase 1 Decision Ordering Paragraphs (OP) 3(a), 3(e), 3(h), 5(a), 5(b)-(d), and 7 (Phase 1 Decision at 73-77). The activities were scoped and conducted in compliance with the Phase 1 Decision in its entirety, which includes broader requirements than those required for cost recovery, including OP 6(h) for the NOx Study, OP 6(n) for the GHG Study and OP 6(g) for the Leakage Study (*id.* at 76-77). Phase 1 Decision OP 6 requirements to advance to Phase 2 are being addressed in A.24-12-011.

<sup>2</sup> Expenditures for these activities were incurred from January 2023 through December 2024, with some discrete trailing charges in 2025.

<sup>3</sup> See Chapter 1 (Direct Testimony of Shirley Arazi and Amy Kitson) for a description of miscellaneous costs.

<sup>4</sup> See Chapter 6 (Direct Testimony of Jenny Chhuor and Michael W. Foster) for a description of the overhead costs.

**Table 1: Air Studies Total Costs (in millions)**

Study	Labor	Non-Labor	Overheads	Total Loaded Costs
GHG Study	\$0.1	\$0.4	\$0.1	\$0.6
Leakage Study	\$0.1	\$0.3	\$0.1	\$0.5
NOx Study	\$0.1	\$0.6	\$0.1	\$0.8
<b>Total Costs</b>	<b>\$0.3</b>	<b>\$1.3</b>	<b>\$0.3</b>	<b>\$1.9</b>

## **A. Labor Costs**

Labor costs for the Air Studies total \$0.3 million and consist of support from SoCalGas personnel within the Angeles Link organization (e.g., project managers, directors, and subject matter experts (SMEs) as well as personnel from other departments in areas such as general administration, regulatory and policy, and public affairs).<sup>5</sup> The subject matter expertise within SoCalGas was utilized throughout the development of the Air Studies including collaboration with personnel from Environmental Services and within the Angeles Link team. Leveraging this institutional knowledge allowed for alignment with company standards, industry codes, and technical requirements, while reducing costs and reliance on third-party contractors.

Labor costs reflect the following activities:

- Assigned staff, including a dedicated project manager and engineers with expertise in air emissions.
- Defined study objectives and developed scope of work.
- Provided oversight of third-party contractor activities including cost and schedule management.
- Conducted working sessions with third-party contractor.
- Identified interdependencies with other Phase 1 Studies.
- Coordinated with internal subject matter experts and third-party contractors to prepare technical content.
- Collaborated with SMEs within the Environmental Services Department, particularly to prepare and review draft and final study findings.

<sup>5</sup> See Chapter 1 (Direct Testimony of Shirley Arazi and Amy Kitson) for additional labor costs details.

- Internal time and resources to prepare for stakeholder meetings, external presentations and engagements.
- Managed contract scope adjustments driven by stakeholder feedback.
- Collaborated on technical evaluation and report development.
- Prepared for stakeholder meetings and workshops, including development of materials (e.g., slide decks and handouts).
- Reviewed and considered stakeholder feedback as appropriate.
- Supported the development of written responses and incorporated stakeholder feedback where appropriate.
- Supported preparation of quarterly reports in alignment with Phase 1 Decision.

## **B. Non-Labor Costs**

Non-labor costs for the Air Studies total \$1.3 million and consist of third-party contractor costs and miscellaneous expenses. Examples of non-labor cost activities include the following:

- Participating in meetings to gather pertinent information based on scope objectives, including evaluating study interdependencies.
- Coordination with the University of California Irvine (UCI) to address technical content and assumptions in the NO<sub>x</sub> Study.
- Conducting technical evaluations, including coordination and data exchange with other Phase 1 Studies.
- Developing and refining report to incorporate evolving study needs and stakeholder feedback.
- Collaborating with internal SoCalGas personnel to align efforts.
- Reviewing draft study and incorporating stakeholder feedback where appropriate.
- Managing the studies through cost tracking, schedule oversight, and overall progress monitoring.
- Reviewing milestone deliverables, quarterly reports, and stakeholder comments and responses, as appropriate.



The following sections provide details on the third-party contractor and contract amendments necessary to conduct the Air Studies.

SoCalGas awarded Stantec a not-to-exceed (NTE) contract for \$675,000 to develop the three Air Studies. In February 2024, an amendment was executed to extend the term of the original contract from March 2024 to December 2024, revise the scope of services, and increase the contract amount of \$675,000 by \$219,867 to a total of \$894,867. The additional funding addressed increased preparation for and participation in stakeholder meetings beyond the original quarterly meeting cadence, preparation of a technical approach summary document for each of the three studies, inclusion of steam methane reforming (SMR) and biomass gasification in the GHG Study, and geospatial evaluation of NOx emissions related to disadvantaged communities.

In April 2024, a second amendment was executed to further revise the scope of services and adjust the NTE amount from \$894,867 by \$82,410 to a total of \$977,277. The additional funding addressed participation at weekly coordination meetings with SoCalGas from January 2024 through April 2024, updated geographic information systems (GIS) mapping and figures, and revisions to the GHG Study and NOx Study. The total costs incurred for Stantec are \$977,236.

SoCalGas employed study and cost control measures to oversee the scope of the study and management of contractors, including:

- Following a structured invoicing and cost management process. Invoices were reviewed against activities and deliverables to confirm costs reflected work performed. This approach provided transparency in expense tracking and enabled contractor work to progress in accordance with the agreed timeline and costs. While Stantec's invoices itemized costs per study, the contract was managed to the top-level contract amount, enabling greater flexibility in management.

- Regular coordination across the Angeles Link organization<sup>6</sup> and internal SMEs for review of technical analysis to confirm alignment across Phase 1 Studies.
- Assessment of the need for modifications to the study scope.

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<sup>6</sup> See Chapter 1 (Direct Testimony of Shirley Arazi and Amy Kitson) for further details regarding the Angeles Link organization.