

KNOW THE DISTANCE

FIRE DEPARTMENT AIR-RESUPPLY PLANNING GUIDE

Measure the distance. Evaluate the demand. Plan before the first alarm.

This publication provides a structured, actionable planning process for evaluating firefighter travel distance, air-resupply logistics, staffing demands, and department capacity in high-rise, big-box, warehouse, fulfillment, industrial, underground, and other large or complex occupancies.

PHASE 1: IDENTIFY PRIORITY BUILDINGS

Objective: Identify buildings in the response area that may create significant firefighter travel and air-resupply demands.

- Identify high-rises, big-box stores, warehouses, fulfillment centers, industrial occupancies, underground facilities, and other buildings where crews will operate far from an entrance or reliable air resupply.
- Prioritize buildings based on interior vs. defensive attack.

PHASE 2: WALK THE OPERATING ROUTE

Objective: Follow the route firefighters would realistically use to reach the anticipated point of operation and return to reliable breathing air.

- Identify the primary and secondary fire department access points.
- Select realistic operating locations, including upper fire floors, remote warehouse sectors, rack-storage areas, pick modules, mechanical spaces, basements, tunnels, or industrial process areas.
- Walk the route from the operating location to replacement air and back.
- Document any route that is significantly longer or more difficult than the distance shown on the building plan.

PHASE 3: EVALUATE THE WORK REQUIRED

Objective: Identify the physical work firefighters must perform before reaching the assignment and during the return to replacement air.

- Identify and document the hose, tools, forcible-entry equipment, spare cylinders, medical equipment, and other loads crews are expected to carry.
- Determine whether operations may require extended stair climbing, long charged-hoseline advances, movement through rack storage, or travel around machinery and fixed obstructions.
- Conduct a controlled company-level evolution using the equipment and routes expected during an incident.
- Observe where crews slow, separate, stop, reposition equipment, or require additional personnel.
- Identify assignments where significant air supply may be consumed before crews reach the operating area.
- Identify where workload, heat, fatigue, or travel time may affect crew effectiveness and rotation.

PHASE 4: ESTABLISH THE AIR-RESUPPLY PLAN

Objective: Define how full cylinders will reach firefighters and how empty cylinders will be returned throughout the incident.

- Identify the primary and alternative air-staging location for the building.
- Determine how full cylinders will move from apparatus or mobile-air resources to staging and operations.
- Estimate how many cylinders may be required.
- Confirm that the department's cylinder supply, filling capacity, and mutual-aid resources can support the plan.

PHASE 5: DETERMINE THE STAFFING COMMITMENT

Objective: Determine how many firefighters are required to operate and sustain the air-resupply plan.

- Identify the number of firefighters required to move full cylinders to and from the operating area.
- Calculate the total number of firefighters committed to air resupply logistics and crew cycling.

PHASE 6: EVALUATE THE OPERATIONAL IMPACT

Objective: Determine what happens to the rest of the incident when firefighters are committed to air resupply.

- Determine whether the fire attack can remain adequately staffed.
- Determine whether search and rescue can be maintained.
- Determine how ventilation can be achieved to reduce heat/smoke.
- Confirm that rapid intervention remains fully staffed and available.
- Evaluate how long crews may be unavailable while traveling to air resupply.
- Evaluate what apparatus and personnel remain available to respond to other emergencies in the area.
- Identify the point at which air resupply requirements begin competing with the resources needed to complete the mission.

PHASE 7: COORDINATE MUTUAL AID & SPECIALIZED RESOURCES

Objective: Ensure neighboring departments and regional resources can support the air-resupply plan.

- Identify the mutual-aid departments expected to provide personnel, cylinders, mobile-air units, or filling capability.
- Confirm cylinder and equipment compatibility among responding departments.
- Confirm the availability and expected response time of mobile air or breathing air support units.
- Conduct a practical evolution with mutual-aid partners whenever possible.

PHASE 8: TEST THE PLAN

Objective: Determine whether the written air-resupply plan can be performed with the personnel, equipment, and time available.

- Conduct a controlled evolution using the actual operating route.
- Use the hose, tools, PPE, SCBA, and cylinder loads expected during an incident.
- Establish air staging and test the movement of full and empty cylinders.
- Record travel, exchange, and return times.
- Evaluate whether the department can sustain search, attack, rescue, rapid intervention, accountability, relief, and air logistics at the same time.
- Conduct an after-action review and identify assumptions that failed during the evolution.

PHASE 9: ANSWER THE CAPACITY QUESTION

Objective: Determine whether conventional air-resupply methods are sufficient for this building under realistic response conditions.

- Review cylinder supply and filling capability to determine projected demand; do you have inventory and capacity to meet the operational demand?
- Review the staffing required for air resupply logistics and crew cycling; do you have the personnel required to sustain operations beyond the initial operating period?
- If the answer to these questions is “no” file a report with municipal leadership for the purpose of risk management so they become aware of the result in the event of an emergency when lives may be at risk.

Note: This is an overview of the assessment process. A more detailed step-by-step process is also available [here](#).

THE CAPACITY QUESTION

Does the department have the capacity to move enough air, far enough, for long enough, while sustaining the firefighters performing the work and still accomplishing every other critical fireground function?

QUICK-REFERENCE SUMMARY

The Five Non-Negotiables Before the First Alarm

DISTANCE

- Actual operating routes walked
- Vertical and horizontal travel understood
- Replacement-air route identified

WORKLOAD

- Equipment loads considered
- Stair climbs and hose advances tested
- Crew rotation and rehabilitation addressed

AIR RESUPPLY

- Primary and alternate staging identified
- Cylinder movement plan documented
- Supply and filling capability verified

DEPARTMENT CAPACITY

- Realistic staffing used
- Air-logistics commitment calculated
- Impact on other fireground functions understood

PLAN VALIDATION

- Mutual-aid partners included
- Practical evolution completed
- Findings incorporated into the preplan

THIS OR THAT?

- **THIS:** Continue relying on firefighters to carry breathing air to the point of operation.
- **THAT:** Evaluate ways to bring reliable breathing air closer to where firefighters need it.

The guide does not select the answer.

It gives the department a process for determining whether the current approach is supportable.

MEASURE IT. STAFF IT. PLAN FOR IT.

Before the fire service can answer, “This or That?”, it first must Know the Distance.