

2026 WPSP

# Reducing Fine Dust in Port Areas through UPA-Local Government Urban Forest Creation

Environmental Protection

Turning Neglected Spaces into **Eco-Friendly Green Spaces**

# Background

Ulsan Mipo Industrial Complex

Ulsan New Port Station

Ulsan New Port

Project Site - Ulsan Port Authority  
**A=10,300m<sup>2</sup>**

Eco-Friendly

Regional Development

Within the Port Hinterland, designated as a mandatory green space but currently left as a neglected vacant lot, unused land exists

In accordance with the purpose of establishing the Port Authority for balanced national development and regional development, need to identify collaborative projects with Ulsan Metropolitan City

### Challenges

Increasing importance of eco-friendliness in line with national policy directions creates a need for UPA to lead the discovery of new eco-friendly projects

### Challenges

Ulsan City is promoting urban forest creation projects to improve air pollution, but facing difficulties due to failure to secure appropriate project sites(state-owned land)



Deriving Collaborative Projects

# Project Objectives

Achieving carbon neutrality in urban areas, reducing fine dust, mitigating urban heat islands, etc.



**Creating urban forests to respond to the climate change crisis  
and establish a pleasant port environment**



Providing the project site

Consulting with related  
organizations adjacent to the site

Approving and managing project  
implementation within the port

Establishing plans  
for soil runoff management

Securing the project budget  
(approx. 700 thousand US DOLLAR)

Maintaining facilities and trees

Ordering and supervising urban  
forest creation construction

**Identify appropriate sites owned by Ulsan Port Authority and divide roles  
through government-public cooperation to promote the urban forest creation project**

# Implementation Strategies

## Case 1 Normalizing Overall Project Management by Establishing a Collaboration System

**Obstacle** Absence of a communication channel with local governments due to a function-centric organizational structure

Difficulties in project consultation and implementation with the Nam-gu Office of Ulsan City due to dispersed functions across departments such as Asset Management, Port Operations, and Safety & Environment

**Solutions** Forming a Collaborative Project Task Force to establish an overall project plan and sign business agreements with local governments

### Solution ①

Asset Management Department, Port Operations Department, Safety & Environment Department, etc.

Forming a company-wide Collaborative Project Task Force

**Establishing a CONTROL TOWER**

### Solution ②

Relevant departments in each institution (Parks and Gardens Division of Nam-gu Office, Ulsan City; UPA Management Support Department)

Establishing direct communication channels

**Dividing operational roles between institutions and jointly establishing implementation plans**

# Implementation Strategies

## Case 2 Securing Waste Disposal and Construction Safety Through Cooperation with Related Agencies

### Obstacle

As land left unused for a long period, wild shrubs have overgrown and large illegally dumped waste has accumulated, requiring environmental cleanup

Need to establish measures for disposing of long-term abandoned waste (temporary toilets, abandoned vessels, etc.)

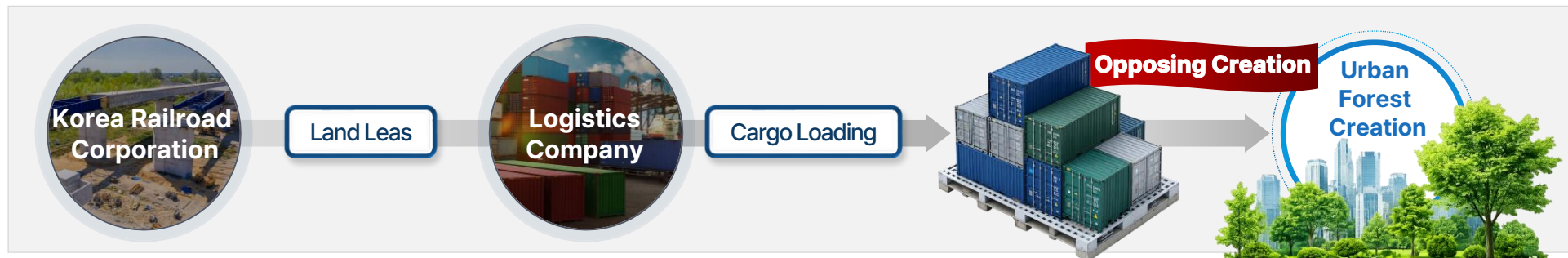
The project site is classified as a 'park' by land use category, but is effectively an unmanaged, vacant, and unused plot of land with a large amount of waste present

### Obstacle

Logistics companies at the adjacent Ulsan New Port Station and the Korea Railroad Corporation expressed opposition to the construction

Logistics companies based at Ulsan New Port Station expressed opposition to the construction

Concerns over project delays due to potential encroachment on cargo loading areas during construction



# Implementation Strategies

## Case 2 Securing Waste Disposal and Construction Safety Through Cooperation with Related Agencies

### Solutions

Adding waste disposal to the scope of the urban forest creation project and aligning cooperation requirements through on-site consultations with the relevant organization (Ulsan New Port Station)

### Solution ①



Within the scope of work for the urban forest creation project  
**Prior to land leveling work**  
**Adding waste disposal procedures**

### Solution ②



Requesting official cooperation letters from Korea Railroad Corporation, and through on-site consultation processes,  
**Establishing a plan for the project's smooth implementation**

- » **Sept 08, 2025 (Mon) Public-Private-Corporate meeting held at Ulsan New Port Station**  
(Manager, Urban Forest Manager from Nam-gu Office Garden and Green Space Division, Business Department Manager from Korea Railroad Corp, Ulsan New Port Station Master, CEO of Bukwang Integrated Logistics)
- » **Ensuring safety and expediting construction by adjusting the construction schedule and the rest facility layout**

# Implementation Strategies

## Case 3 Carrying out Land Leveling and Excavated Soil Disposal by Utilizing Dredged Soil

### Obstacle

Need for land leveling work on the target site and plans for disposing of excavated soil

Pre-leveling work is necessary due to the slope of the land, but finding a disposal method for the excavated soil poses a challenge

### Solutions

Establishing project plans led by the Asset Management Department and managing the overall schedule

### Solution ①

Asset Manager reporting the new project implementation plan to executives and by requesting cross-departmental cooperation, **driving the execution of the overall project**



» July 25, 2025 (Fri) **Field visit to the dredged soil landfill site**  
UPA Asset Manager, Urban Forest Manager from the Parks and Gardens Division of Nam-gu Office, Construction Site Manager, Construction Supervisor



# Implementation Strategies

## Case 3 Carrying out Land Leveling and Excavated Soil Disposal by Utilizing Dredged Soil



### Key Milestones



# Implementation Strategies

## Case 3 Carrying out Land Leveling and Excavated Soil Disposal by Utilizing Dredged Soil



### Detailed Schedule Items

#### Detailed Implementation Plan and Review Meeting for Urban Forest Creation (Nam-gu Office, Ulsan)



- Reviewing existing urban forest creation cases implemented by Nam-gu Office, Ulsan City
- Reviewing relevant risks as this is the first instance of development on land owned by a public institution
- Presenting requirements and opinions regarding forest creation and facility installation, etc.

#### Regarding Project Implementation Gathering feedback from relevant departments and Risk Assessment



##### Port Operations Department

Inspecting land utilization status and management conditions

##### Safety & Environment Department

Measuring environmental improvement effects through project implementation and checking for performance recognition under relevant systems

##### Port Construction Department

Reviewing the progress of land preparation and tree planting work

# Implementation Strategies

## Case 3 Carrying out Land Leveling and Excavated Soil Disposal by Utilizing Dredged Soil



### Detailed Schedule Items



**Inspecting on-site land conditions, finalizing the budget, and carrying out the detailed design**

- Reviewing waste within the current site and methods for disposing of dredged soil resulting from construction
- Reviewing and finalizing budget allocation from the Korea Forest Service (350 thousand US DOLLAR) and Ulsan Metropolitan City (350 thousand US DOLLAR)
- Reviewing the results of the detailed design services for the urban forest creation project according to the implementation plan



**Discussing irrigation plans through consultations with the Waterworks Headquarters and Ulsan New Port Station (Station Master)**

- Need to establish a plan for installing irrigation facilities for the proper growth of trees
- Completed consultations on water usage within nearby buildings (New Port Station) and installing additional water meters through discussions with Waterworks Headquarters and Ulsan New Port Station

# Implementation Strategies

## Case 3 Carrying out Land Leveling and Excavated Soil Disposal by Utilizing Dredged Soil



### Detailed Schedule Items




**Negotiating the allocation of rights and obligations among institutions and signing a business agreement**

- Signing a business agreement through inter-institutional consultations and internal legal reviews
- (Rights and Obligations) Collaboration fields, effective period, performance recognition, maintenance/management, agreement modification/cancellation, property tax reduction, etc.



**Inspecting the construction status and reviewing plans for waste and dredged soil disposal**

- Disposing of waste prior to land leveling work within the scope of work for the urban forest creation project
- Receiving and storing dredged soil from the pier construction in the adjacent reclaimed land



**Carrying out land preparation work and holding a Public-Private-Corporate coordination meeting**

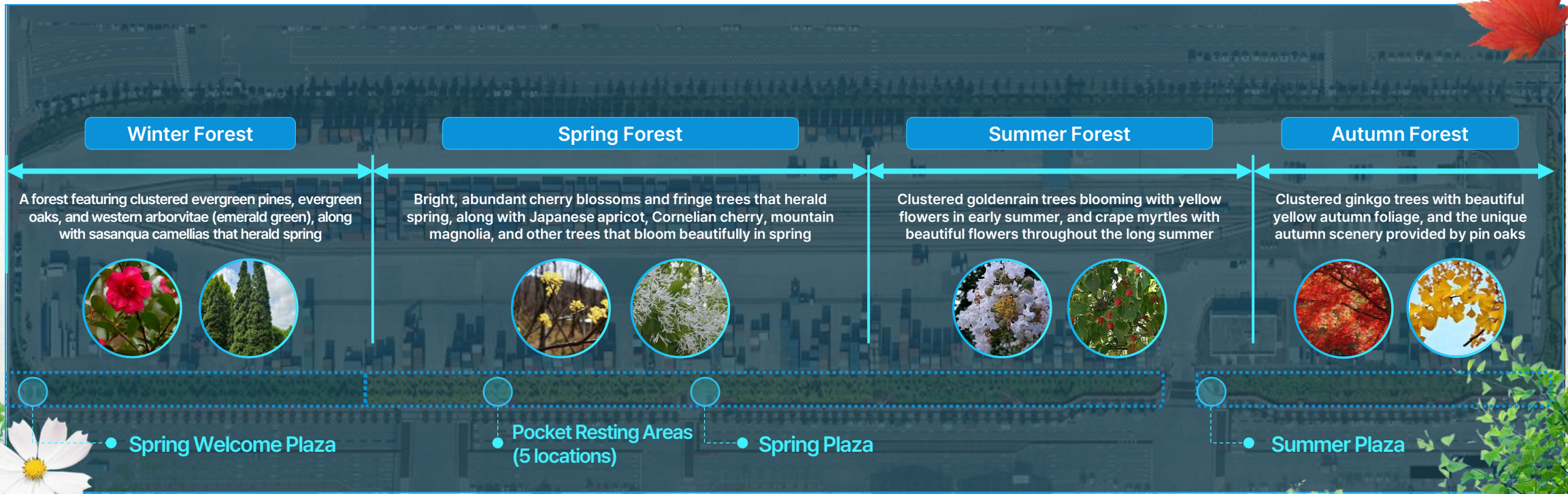
- Ensuring safety and expediting construction by adjusting the construction schedule and the installation locations of the rest facilities

# Implementation Achievements

Completion of the Climate Response Urban Forest Creation Project,  
a collaborative effort between the Ulsan Port Authority and Ulsan City (Dec 20, 2025)

A walking path where a subtle fragrance spreads through beautiful cherry blossom and fringe tree flower paths, with each section featuring

## a forest themed around the four seasons



# Project Outcomes

## Bird's-Eye View of Ulsan New Port Urban Forest (Completed)



Fine Dust Reduction  
Effects of Urban  
Forests



Establishing cooperative  
relations and securing  
momentum for jointly  
promoting eco-friendly  
projects



Expanding the Ulsan  
Port Authority's Eco-  
Friendly Project  
Portfolio

# Project Outcomes

## Fine Dust Reduction Effects of Urban Forests

\* Effects of planting 4,821 trees of 30 species across a total area of 1 ha (Based on research data from the Korea Forest Service's Urban Forest Master Plan)

Effective in reducing fine dust concentrations due to lower temperatures and higher humidity compared to downtown areas

Fine dust removal by trees

Tree leaves with fine, complex surfaces adsorb and absorb fine dust, while branches and trunks block settling particles

Fine Dust (PM10)  
Average **25.6%** reduction

Ultrafine Dust (PM2.5)  
Average **40.9%** reduction

1 Tree = 35.7g (Annual fine dust absorption)

47 Tree = 1680g (Equivalent to the annual fine dust emissions of one diesel vehicle)

Urban Forest 1 ha = 168kg (Pollutant removal)

Expected to remove **168kg** of air pollutants annually in port areas, reducing fine dust by **25.6%** and ultrafine dust by **40.9%**

# Project Outcomes

## Establishing Cooperative Relations and Securing Momentum for Jointly Promoting Eco-Friendly Projects



Ulsan City Nam-gu Office's  
**Tourism revitalization in areas  
near Jangsaengpo Port**



**Securing a public-institutional partnership  
for the sustainable development of port areas  
through eco-friendly projects**

Establishing cooperative relations with Ulsan Metropolitan City  
**Securing momentum for jointly promoting eco-friendly projects,  
such as cooperation for the Ulsan Hydrangea Festival and the cherry blossom path creation project**

# Project Outcomes

## Expanding the Ulsan Port Authority's Eco-Friendly Project Portfolio

Promoting new projects to improve the quality of life for residents in port areas

Residents in neglected areas near the port  
**Improving quality of life**



Promoting eco-friendly businesses and laying the foundation for environmental improvement

Foundation for urban forest creation  
**Expanding eco-friendly business sectors**



Advancing new initiatives to improve the lives of port area residents, addressing a concern raised by the National Assembly

**Expanding the eco-friendly business sectors of Ulsan Port Authority**

# Expected Effects

## Expanding the effects of climate-responsive urban forest creation through cooperation between Ulsan Port Authority and Ulsan City

### 1 Improving the atmospheric environment in port areas

Removing air pollutants annually and effectively reducing fine and ultrafine dust

### 2 Establishing a government-public cooperation system

Establishing a foundation for jointly promoting eco-friendly projects by building cooperative relations with Ulsan Metropolitan City

### 3 Laying the foundation for sustainable development of port areas

Strengthening cooperation for environmental improvement and sustainable development of port areas through the implementation of eco-friendly projects

### 4 Improving the quality of life for residents in port areas

Enhancing the community-friendly and living environment for residents near the port through the creation of urban forests



"An eco-friendly space co-created by the port and the local community"

# Thank you.

