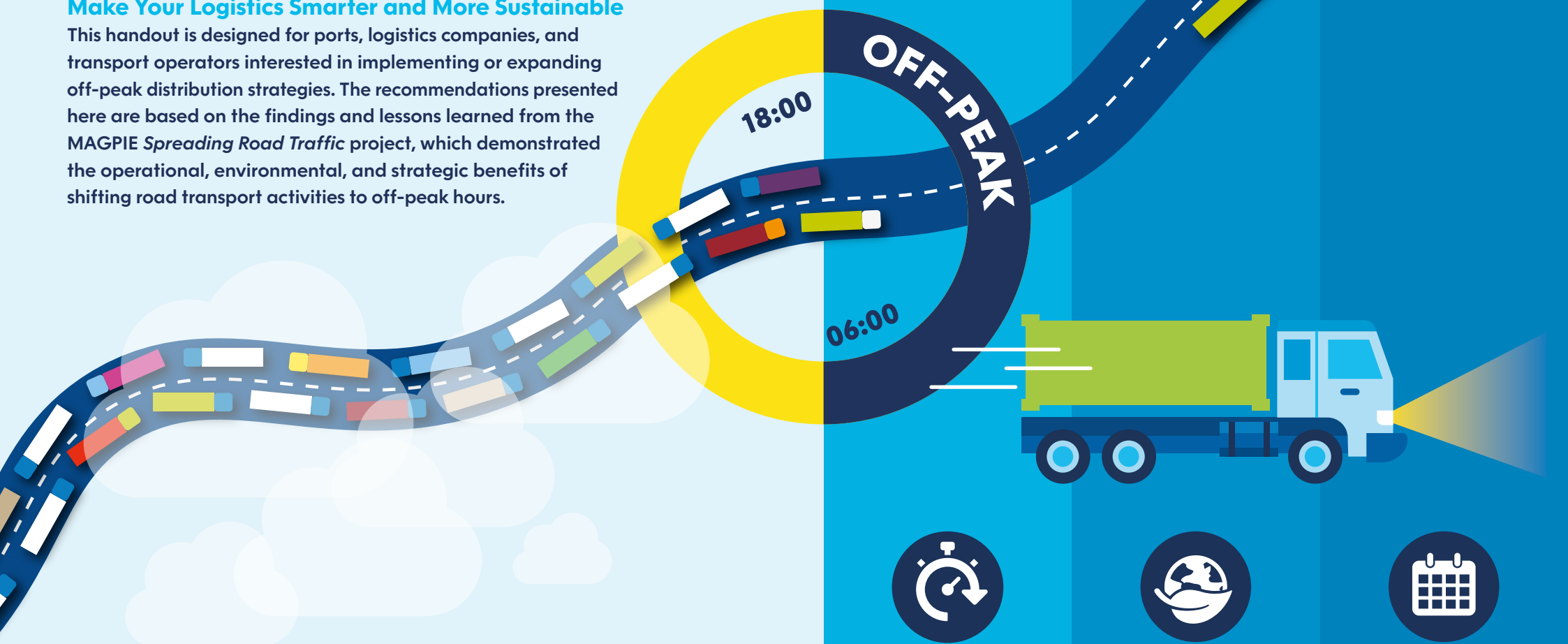


HANDOUT FOR IMPLEMENTING OFF-PEAK DISTRIBUTION

Make Your Logistics Smarter and More Sustainable

This handout is designed for ports, logistics companies, and transport operators interested in implementing or expanding off-peak distribution strategies. The recommendations presented here are based on the findings and lessons learned from the *MAGPIE Spreading Road Traffic* project, which demonstrated the operational, environmental, and strategic benefits of shifting road transport activities to off-peak hours.



EFFICIENCY
LESS CONGESTION/
WAITING TIMES



SUSTAINABILITY
REDUCED EMISSIONS



OPTIMISATION
BETTER PLANNING

Why choose Off-Peak Distribution?

The Port of Rotterdam Authority, together with market stakeholders, has been exploring ways to make distribution more sustainable and improve the flow of goods along the port's road network. Your company can play a key role in this transition. The recommendations provided in this handout support efforts to reduce congestion, lower emissions, and enhance operational efficiency. By making use of underutilised road capacity during night-time hours, your company can achieve faster turnaround times, lower fuel consumption, and more reliable service delivery. In addition, you will be contributing to improved air quality and road safety by alleviating traffic pressure during the busiest times of the day.

Key Findings from MAGPIE Demo 10

The MAGPIE project conducted multiple pilot studies involving over 3,000 truck trips across one and a half years. These pilots revealed that off-peak driving can reduce average transit times by approximately 10 minutes per trip, primarily due to faster terminal processing and reduced congestion. Additionally, emissions modelling, conducted as part of MAGPIE Work Package 4 showed that, while annual CO₂ reductions are modest (~1%), the hourly benefits are significant, particularly in reducing daytime emission peaks. These findings highlight both the operational and environmental value of off-peak distribution and support its broader adoption.



Steps Your Business Can Take Towards Implementation

1. Identify key stakeholders and engage them early, including transport companies, terminal operators, and clients.
2. Define clear KPIs (e.g., turnaround time, emissions, cost savings) and establish baseline measurements.
3. Collect and analyse data using board computer systems or manual logs to understand current traffic patterns.
4. Pilot off-peak operations with selected partners and monitor results.
5. Use dashboards (e.g., PowerBI) to visualise insights and share them with stakeholders.
6. Iterate based on feedback and scale up successful practices.

Practical Tips for Adoption

1. **Start small:** Begin with one or two pilot partners to test feasibility.
2. **Use data:** Leverage board computer or floating car data for accurate and low-effort monitoring.
3. **Communicate benefits:** Highlight reduced waiting times, cost savings, and environmental impacts.
4. **Address concerns:** Identify methods of incentivizing partners to collaborate.
5. **Collaborate:** Work with industry associations to build trust and scale adoption.



Challenges to Address

Limited night-time staff

Many companies lack planners and drivers willing to work night shifts.

Tip: Offer shift bonuses, rotate schedules, and emphasise the benefits of quieter, faster operations.

Higher personnel costs

Night shifts often require additional pay, impacting margins.

Tip: Compare costs with savings from reduced delays and explore subsidies or shared logistics models.

Restricted opening hours

Warehouses and depots may not operate at night.

Tip: Collaborate with partners to extend hours or use hubs that can buffer night deliveries for daytime handling.

Scepticism about data sharing and benefits

Some stakeholders are hesitant to change or share data.

Tip: Start with small pilots, share anonymised results, and involve trusted industry associations to build confidence.

These challenges can be mitigated through stakeholder engagement, transparent communication, and showcasing successful pilot outcomes.

Future Outlook

As the logistics sector evolves, off-peak distribution will play an increasingly important role in achieving sustainable and efficient transport. The transition to tools like a holistic Port Emissions Platform will enable real-time tracking and the integration of environmental metrics into operational planning across the port. By combining traffic optimisation with the shift to low- and zero-emission vehicles, ports and logistics providers can align operational efficiency with climate objectives. This handout serves as a foundation for that transition, offering a practical roadmap for implementation and scale-up.

More information

For more information or to receive the MAGPIE report, please contact us via

Celeste Muilwijk: cl.muilwijk@portofrotterdam.com

