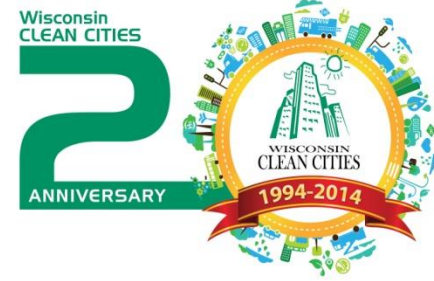


Wisconsin Clean Cities

“Driving Wisconsin Forward”

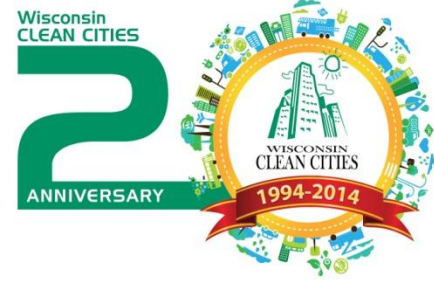


Congestion Mitigation and Air Quality (CMAQ) Eco-Driving Program



WAUKESHA
COUNTY TECHNICAL
COLLEGE

What is Clean Cities?



- U.S. Department of Energy Program
- Provide a framework for industry and government agencies to work together.
- Reduce our Nation's dependence on petroleum in the transportation sector.
- Goal: Reduce U.S. petroleum use by 2.5 billion gallons per year.

Clean Cities Coalitions



- Nearly 100 Clean Cities Coalitions in 45 states.
- 13,000 Stakeholders Nationwide
- 775,000 AFVs using alternative fuels and supporting infrastructure.
- Averted 5.8 million tons of greenhouse gas emissions.
- Displaced more than 4.5 billion gallons of petroleum since 1993.
- On track to reduce petroleum use by **2.5 billion gallons ANNUALLY by 2020!**



Building Industry Partnerships



- Connect fleets with fuel providers and industry partners.
- Provide Training and Information
- Provide Technical Assistance
- Develop Projects
- Pursue Funding Opportunities
- Provide education and outreach to decision makers fleets and the general public.



ECO-DRIVING TRAINING PROGRAM



- Congestion Mitigation and Air Quality (CMAQ) Funding
- Partnered with Waukesha County Technical College (WCTC)
- Eco-Driving Program:
 - Free course for over-the-road class 8 trucks.
 - The course consists of time in a simulator where the software can be customized and classroom time where the drivers are taught eco-driving skills.
 - Drivers receive "behind the wheel-on the road" training with licensed trainers.
 - Drivers are evaluated before and after the course. Evaluations are completed on a simulator and drivers return 2-4 weeks after the initial class for final simulator evaluation.

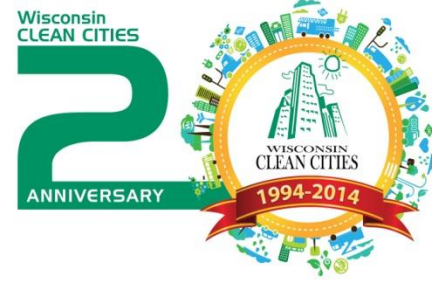
ECO-DRIVING TRAINING PROGRAM



- First eco-driving program of it's kind.
- Trained 19 drivers from 8 different fleets.
- Results
 - 1st Scenario: Increased MPG by 0.636 and time remained about the same.
 - 2nd Scenario: Increased MPG by 1.31 and reduced time by 29 seconds.
 - 3rd Scenario: Increased MPG by 0.856 and reduced time by 32.4 seconds.
- Fuels Fix Article
- EPA Region 4



ECO-DRIVING TRAINING PROGRAM



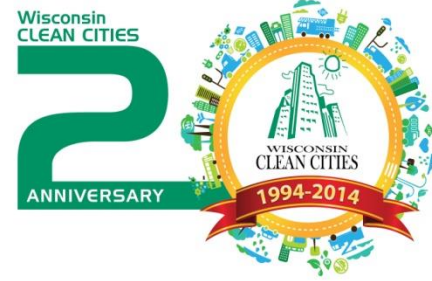
As a driver with 33 years of experience, I thought I knew everything about maximizing the MPG of a truck. After all, my full time job at Paper Transport, Inc. is to mentor drivers on obtaining the best MPG in the industry. I attended the Eco-driving class expecting to hear things I already knew. After sitting through the classroom, the simulator, and going out on the road I realized **I still had room to learn.**

I went back for a follow up class on November 1st to see how I did after a month of practice. My MPG and my distances increased quite a bit on the simulator.

I was very impressed with the **professionalism** of the instructors, the **quality** of the class and the real life actions of the simulators. This was a great learning experience and a lot of fun. I would highly recommend this opportunity to anyone trying to get more MPG out of their trucks; thank you Wisconsin Clean Cities for this opportunity.

- Jeff Thomson, MPG Manager, Paper Transport, Inc.

WI CLEAN CITIES CONTACT INFORMATION



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Eco- Driving 2014



WAUKESHA
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WISCONSIN
CLEAN CITIES



Clean Cities is on track to meet its goal of saving 2.5 billion gallons of petroleum per year by 2020. To achieve this goal, Clean Cities employs three strategies:

1. Replace petroleum with alternative and renewable fuels, including natural gas, propane, electricity, ethanol, biodiesel, and hydrogen
2. Reduce petroleum consumption through smarter driving practices and fuel economy improvements
3. Eliminate petroleum use through idle reduction and other fuel-saving technologies and practices.

Wisconsin Department of Natural Resources

**THANK YOU FOR YOUR SUPPORT OF
ECO-DRIVING 2014.**





WAUKESHA
COUNTY TECHNICAL
COLLEGE

Waukesha County Technical College

Truck Driver Training



- and 12 credit Technical Diploma
- Class A CDL License
- Extensive hands-on and road driving time
- National Safety Council Defensive Driving Certificate
- Truck provided for CDL Road Test



WAUKESHA
COUNTY TECHNICAL
COLLEGE

Waukesha County Technical College

Contract Training



- Pre-Trip Inspection Classes
- 2-hour Driver Assessments
- Driver Simulation
- Post-Accident Re-Training
- Eco-Driving Classes



WAUKESHA
COUNTY TECHNICAL
COLLEGE

TRUCK DRIVER TRAINING

www.wctc.edu



Eco-Driving Class Agenda

- Welcome
- Simulator Driving
- Class Time
- Over the Road Practice
- Wrap up and Schedule Recheck

Simulator Driving

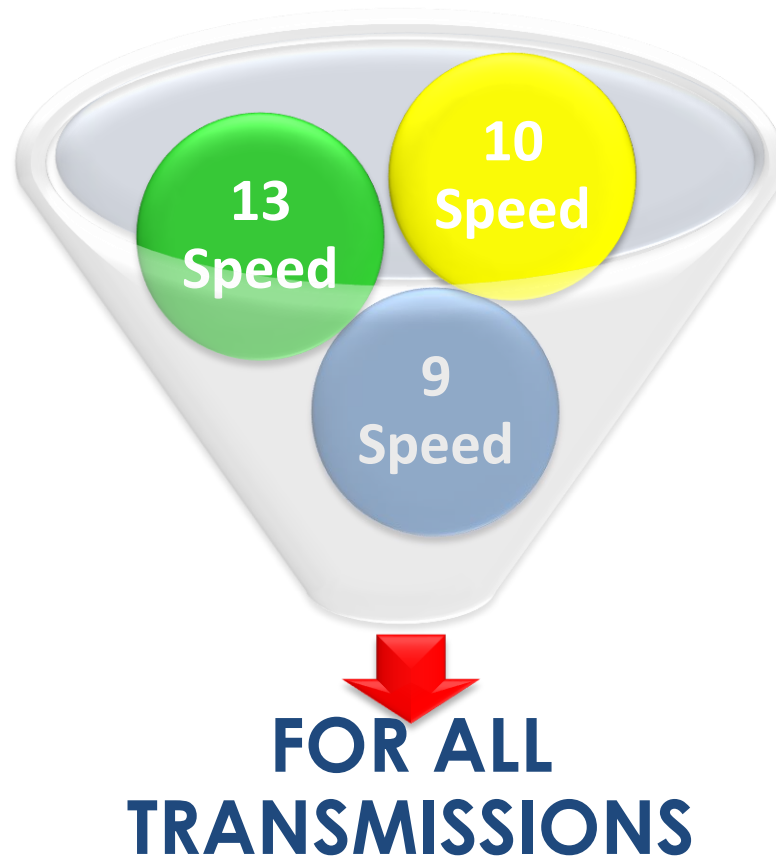






Progressive Shifting

Shifting Techniques



Progressive Shifting

- What is progressive shifting?
- Why should I use progressive shifting?
- What benefits should I see if I try this technique?

Progressive Shifting Described

Upshift between 900 - 1300 rpm in lower gears (varies per truck)

Upshift between 1400 – 1600 rpm in upper gears (varies per truck)

Downshift around 1100-1200 rpm (varies per truck)

communications

Interactive Driving Simulation

www.patrolsim.com
Technical Support

Version

54

Interac



More Shifting Ideas

- Avoid rapid starts
- Shifting for grades
- Rolling under power
- Brake usage

Create Efficient Route Plans

Discussion Topics

- **TOPOGRAPHY**
- **ROUTE LOCATION AND STOPS**
- **ROAD SURFACES**
- **ROAD DESIGN**
- **TRAFFIC PATTERNS**

Reduce Idle Time

(An immediate way to reduce fuel consumption)

What Is Idling?

When a vehicle is running for non-propulsion purposes, it is idling.



Examples

- Trucks idling while in queue
- Vehicles waiting to load/unload passengers or goods, including:
 - Delivery trucks
 - Shuttle buses
 - Taxis

Some Idling Is Difficult To Avoid

Running emergency lights and other auxiliaries

- Emergency vehicles, utility vehicles

Powering HVAC

- All vehicle types, for operator and passenger comfort in extreme weather

Performing non-propulsion (PTO) work

- Bucket trucks, sewer-line maintenance trucks, wood chippers



Most Idling Is Wasteful

Waiting in queue

- Delivery trucks, transit buses and motor coaches, shuttle buses, taxis

Engine warming

- Today's vehicles warm up faster by being driven than idling

Sitting in vehicle

- During lunch breaks, to complete paperwork, to make phone calls



Why Care About Idling?

Idling Pollutes



Idling Pollutes

- **Each gallon of fuel burned produces about 20 pounds of carbon dioxide, a greenhouse gas.**
- **Nationally, 27% of greenhouse gas emissions come from transportation.**
- **Pollution from motor vehicles contributes to the formation of ground-level ozone.**

Idling Threatens Health

- **The most significant health impacts of transportation stem from tailpipe emissions.**
- **Particulate matter irritates the eyes, nose, throat, and lungs, contributing to respiratory and cardiovascular illnesses and even premature death.**
- **Ozone can inflame and damage the airways and aggravate lung diseases such as asthma, emphysema, and chronic bronchitis.**

What Can YOU Do?

3 Steps to Idling Reduction

Step 1: Be AWARE

Reducing idling saves money and protects the air.

- Turn off vehicles when not moving.
- Set policy to reduce unnecessary idling.
- Identify non-vehicle solutions when possible.
- Consider alternative power sources to provide necessary services.

Step 2: EDUCATE Drivers

Inform your drivers about idling reduction.

- Adopt an idling reduction policy
- Host an idling reduction workshop for drivers
- Post signs to remind drivers NOT to idle
- Ask drivers to make a pledge to idling reduction
- Offer incentives/rewards for idling reduction efforts

Step 3: CONSIDER Technology

Options to support your idling reduction efforts

- Engine idle management systems
- Heaters for cab and/or engine block
- Auxiliary power systems
- Electrified parking spaces

Speed and Space Management Techniques

(Proper speed management means operating at the appropriate speed for road conditions)

Discussion Topics

- Keep vehicle speed down
- Use cruise control
- Roll under power
- Type and size of load
- Weather

Conduct Proper Inspections to Maintain Vehicle

This can go a long way in ensuring your
vehicle's safe and efficient operation

It's also required by Law!

Pre-trip Inspection

Complete a full pre-trip inspection each time you get into the vehicle for a new shift

- Tire pressure –
Improperly inflated tires can reduce fuel economy
- Proper lubrication –
Reduces friction and wear
- Check braking system



En-Route Inspection

Allows drivers to
recheck important
areas of the vehicle
and take appropriate
maintenance steps
while in a relatively
safe environment



Another good
reason for
inspections...



Wrap-Up

We need to break some old habits...

- Drive more gently – try progressive shifting
- Cut idle time – saves fuel and emissions
- Take time to inspect the vehicle properly
- Consider your route and driving conditions
- Consider alternative fuel technology

Immediate Results of Eco-Driving

We will be sending less pollutants into the environment

We will save money on fuel

We will save time on routes

Thank You!

