

Modeling I/M in MOVES

Agenda

- ▲ Background
- ▲ What do I/M credits look like?
- ▲ How have we modeled I/M in the past?
- ▲ Proposal for modeling I/M in MOVES

Background

▲ MOVES Goals

- ✓ Data driven
- ✓ Quick and easy to update based on new data
- ✓ Validated and fully defensible

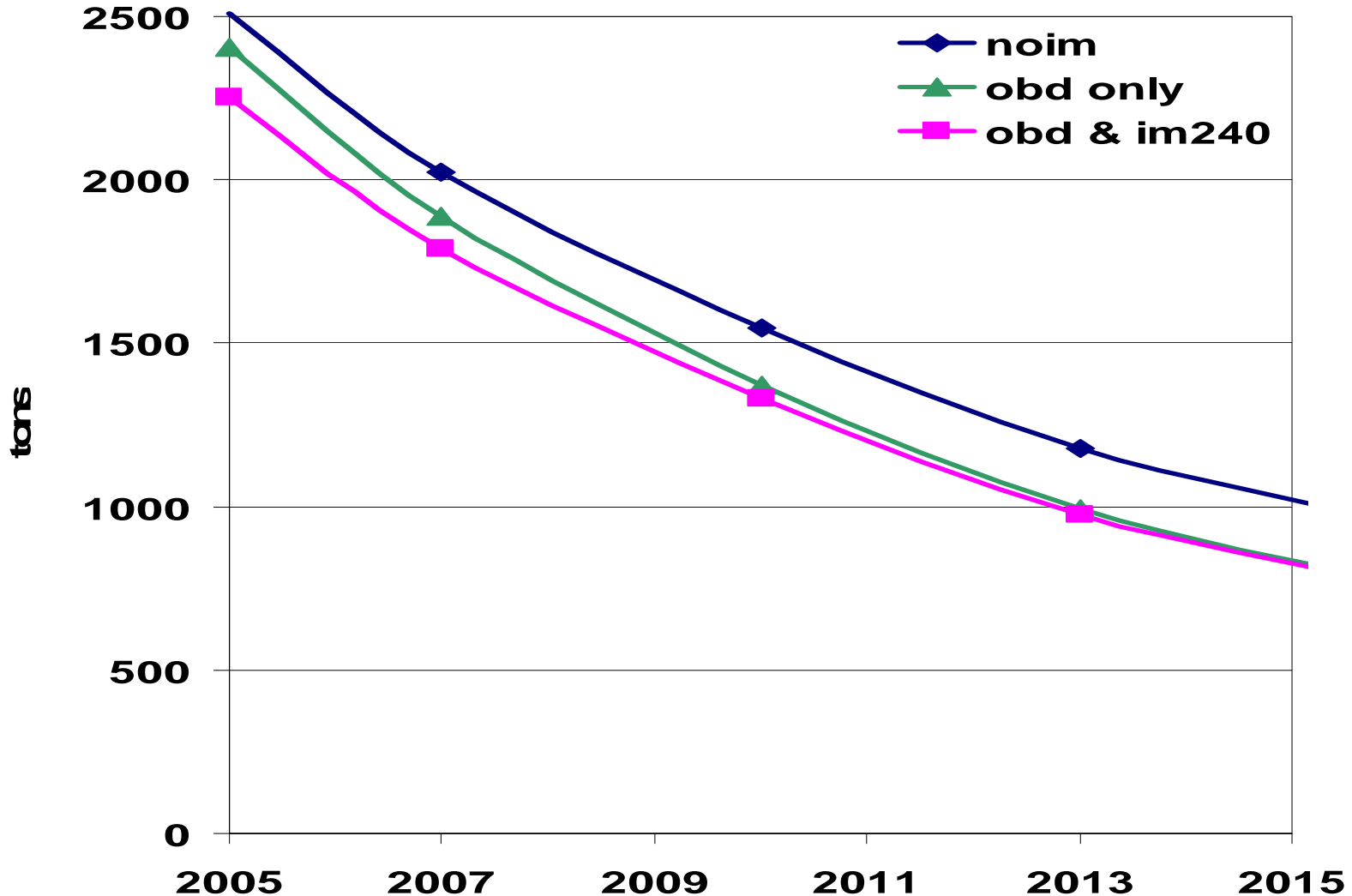
▲ Timeline

- ✓ MOVES2004: draft fleet and activity model
- ✓ MOVES2006: draft highway vehicle model
- ✓ MOVES2007: final highway vehicle model
- ✓ Anticipate process similar to MOBILE6 release for determining when model use is required

Marginal Benefit From Tailpipe Test

LDGV VOC

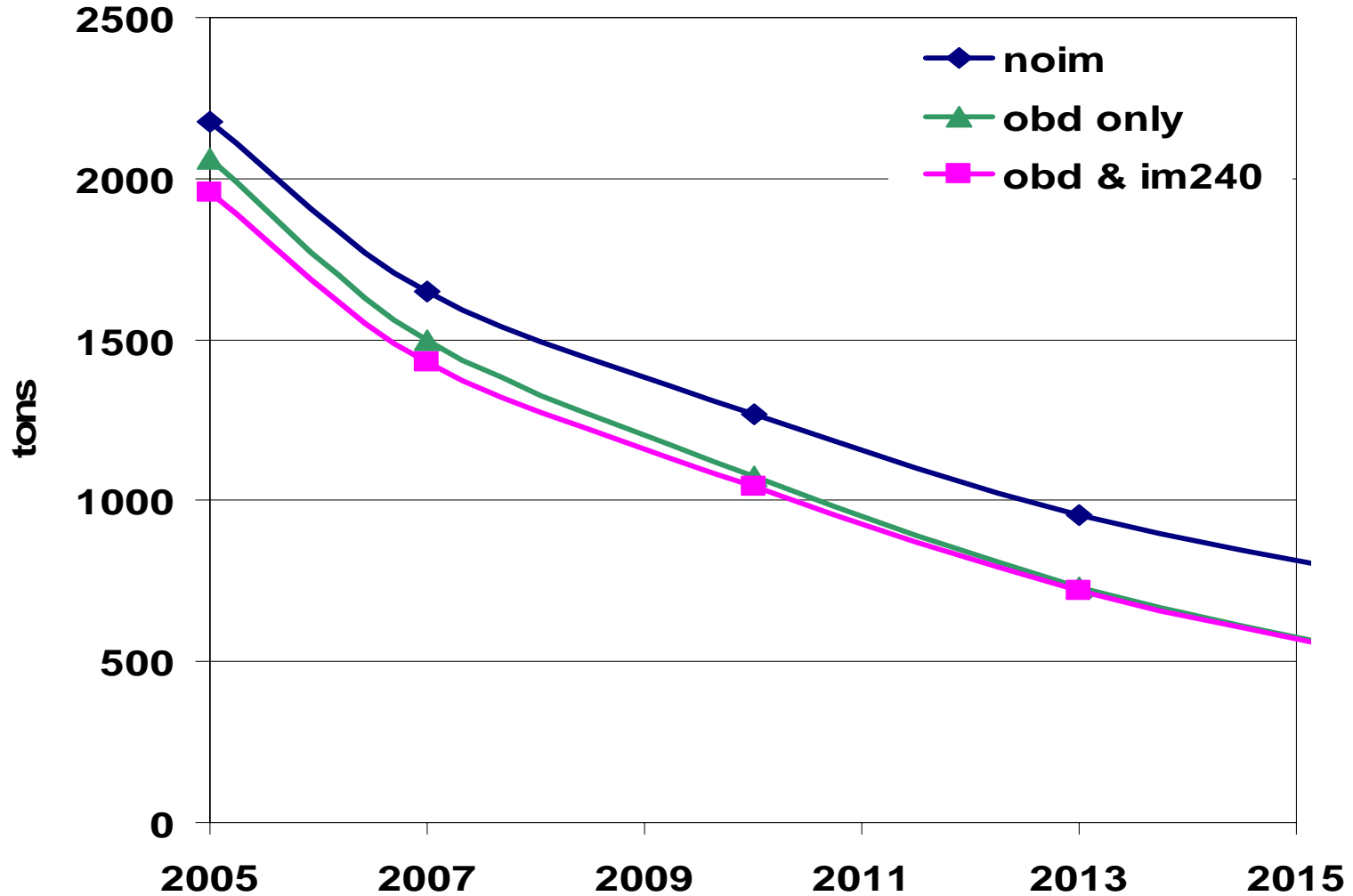
urban county example



Marginal Benefit From Tailpipe Test

LDGV NO_x

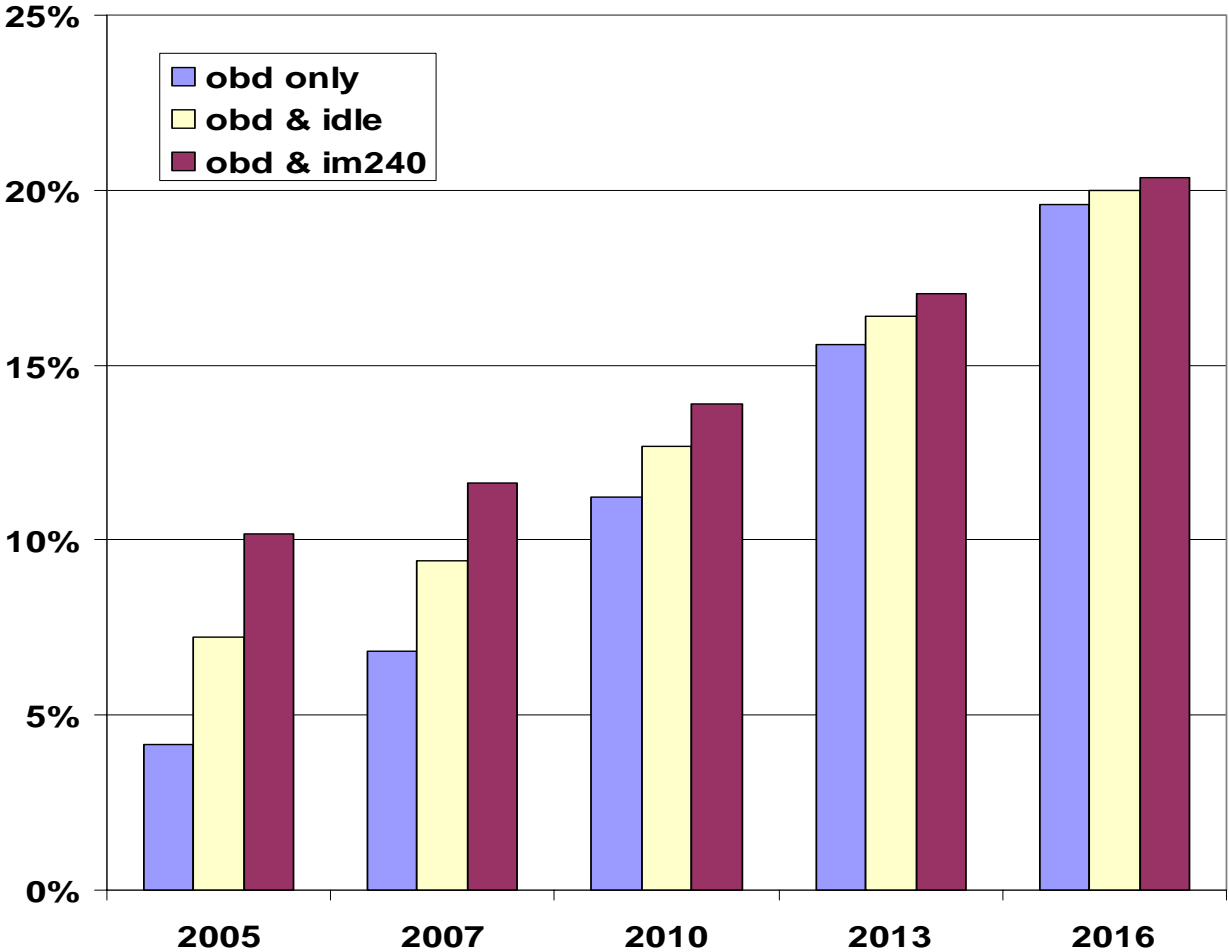
urban county example



Little Difference in % Reduction

LDGV VOC reductions

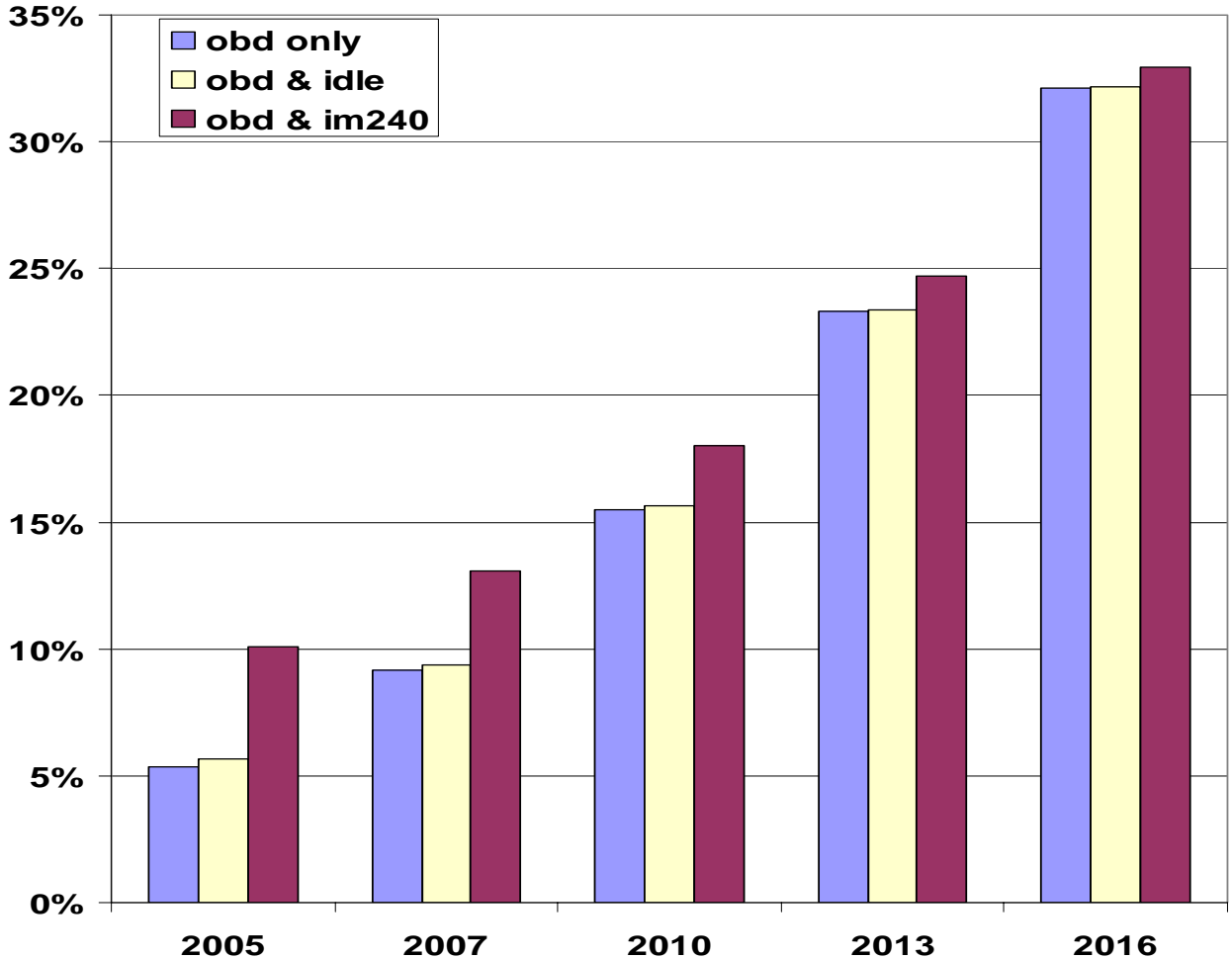
urban county



Little Difference in % Reduction

LDGV NO_x reductions

urban county



I/M Benefits in MOBILE6

- ▲ Big reductions from MOBILE5
- ▲ Lower deterioration rates
 - ✓ Result in less credit
 - ✓ Tier2 further reduces excess and thus I/M effectiveness
 - Cars cleaner
 - Cars more durable
- ▲ Many assumptions/old data underlie I/M credits
 - ✓ NRC:
 - “Empirical data show that the underlying I/M modeling approach is flawed”
 - ✓ Given fleet changes, I/M benefits will decline over time

MOBILE's I/M Menu

Coverage Selections

- ✓ I/M Inspection Types
 - Idle IDRs and repair effects
 - 2-speed IDRs & repair effects
 - ASM IDRs and repair effects
 - IM240 IDRs and repair effects
 - Gas cap test
 - Pressure test
 - OBD test
- ✓ Annual/biennial testing
- ✓ Vehicle type coverage
- ✓ Model year coverage
- ✓ Program start year

User Inputs

- ✓ Failure rate for pre-81 cars
- ✓ Compliance rate
- ✓ Waiver rate
- ✓ Cutpoints
- ✓ Technician training credits
- ✓ Effectiveness discount

Proposal for MOVES

▲ Keep it simple

- ✓ Model year coverage
- ✓ Vehicle type coverage
- ✓ Program start year
- ✓ Three test choices
 - OBD for 1996 and newer
 - Single tailpipe test credit for 1995 and older
 - Gas cap check for 1996 and older vehicles

▲ Drop

- ✓ Other user inputs, pressure test, annual/biennial selection, stringency for old cars, distinction among tailpipe tests

What Will I/M Benefits Look Like?

▲ We don't know

- ✓ Basic emission rates for HC, CO, and NO_x have not been put into the model
- ✓ Analysis to derive I/M credits has not been performed
- ✓ Method for developing I/M credits under development

▲ We anticipate

- ✓ Further reductions in I/M benefit
- ✓ Data will show less excess emissions to be reduced