

## 2 Quantifying Fuel-Saving Opportunities from Specific Driving Behavior Changes

### 2.1 Savings from Improving Individual Driving Profiles

#### 2.1.1 Drive Profile Subsample from Real-World Travel Survey

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1. Calculate the trip distance of each sample trip.
2. Eliminate stop-and-go and idling within each trip.
3. Set the acceleration rate to 3 mph/s.
4. Set the cruising speed to 40 mph.
5. Continue cruising at 40 mph until the trip distance is reached.

To compare vehicle simulations over each real-world cycle and its corresponding ideal cycle, a midsize conventional vehicle model from a previous NREL study was used (Earleywine et al. 2010). The results indicated a fuel savings potential of roughly 60% for the drive profiles with either very high or very low KI and of 30%–40% for the cycles with moderate KI values.

Table 2-1 takes the analysis of these five cycles from the interim report a step further by examining the impact of the optimization steps one at a time in isolation. As indicated by other simulations from the interim report (Gonder et al. 2010), acceleration rate reductions can deliver some small fuel savings, but avoiding accelerations and decelerations (accel/decel) altogether saves larger amounts of fuel. This suggests that driving style improvements should focus on reducing the number of stops in high KI cycles, and not just the rate of accelerating out of a stop.

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