

4 Assessing Various Driver Feedback Approaches

The interim report included a survey of various existing driver feedback approaches and general comments about their strengths and weaknesses. This section contains a more rigorous assessment of the approaches in order to compare them on the basis of their fuel saving potential. This effort inherently requires some subjectivity, so the most valuable outcome may be the process developed to make the comparisons and the key considerations it takes into account. The presented values represent the authors' best effort to impartially quantify an aggregate fuel savings range that each approach could reasonably deliver. This involved applying the insights gained throughout the project that were summarized in the previous two sections.

4.1 Estimating the Savings Potential for Three Types of Behavior Change

The first step in the assessment process involves estimating the savings a feedback device would deliver if it completely succeeds in correcting inefficient driving habits. As described in Section 2, it is useful to divide prospective efficiency improvement behaviors into three general categories: (1) accel/decel reduction and smoothing, (2) speed reduction/optimization, and (3) idle time reduction.

Table 4-1 provides ballpark savings estimates for each of these behavior categories. The very high, medium-high, and medium-low values for per cycle fuel savings and frequency of occurrence are roughly distilled from the detailed analysis in Section 2. The combination of these values produces the bold percentage under each behavior heading, which is intended to approximate the aggregate fuel savings that could be achieved from maximum adoption of the particular behavior. Note that these values are not meant to be precise, but rather to provide a reasonable reference point for use in the next sub-section.

Table 4-1. Approximate savings potential for key behavior/advice categories

		Accel/decel reduction and smoothing	Speed reduction/ optimization	Idle time reduction
Per cycle fuel savings potential	Med-low	5%	8%	0.5%
	Med-high	15%	15%	2%
	Very high	30%	35%	10%
Frequency of opportunity occurrence in general population	Med-low	30%	20%	30%
	Med-high	15%	15%	15%
	Very high	8%	10%	5%
Combined savings opportunity (per cycle magnitude * frequency of occurrence)	Med-low	1.5%	1.6%	0.2%
	Med-high	2.3%	2.3%	0.3%
	Very high	2.4%	3.5%	0.5%
	Total	6%	7%	1%

4.2 Organizing Pertinent Considerations to Enable Detailed Side-By-Side Comparisons between Different Driver Feedback Approaches

The interim project report presented a number of approaches to driver feedback as summarized below: