SMOOTHER PAVING

BIGGER SAVINGS

ROAD MAINTENANCE **SAVINGS**

SMOOTH ROADS CAN RESULT IN A **9%** **INCREASE IN PAVEMENT LIFE.**[1]

NEARLY **8 OF 10**

PAVEMENT ENGINEERS AND DOT OFFICIALS SAY ASPHALT PROVIDES THE SMOOTHEST PAVEMENT.[2]

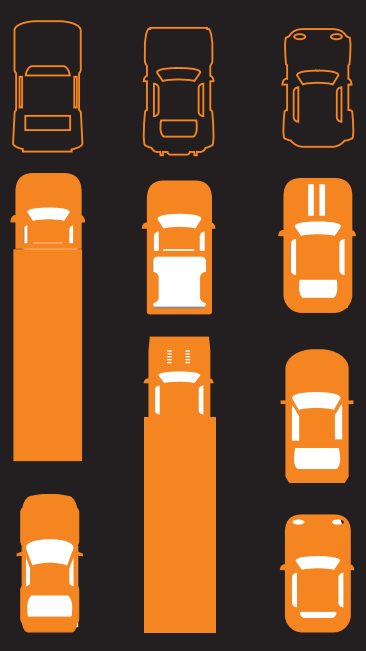
SMOOTH, WELL-MAINTAINED ROADS ARE SAFER ROADS. AS **ROUGHNESS INCREASES**, THE **ACCIDENT RATE** CAN INCREASE BY AS MUCH AS **9.5 INCIDENTS**, DEPENDING UPON TRAFFIC VOLUME.[3]

VEHICLE MAINTENANCE **SAVINGS**

A 1M/KM **INCREASE IN PAVEMENT SMOOTHNESS** COULD RESULT IN UP TO $73.5 BILLION IN MAINTENANCE AND REPAIR COST SAVINGS AND

$340,000,000

IN TIRE WEAR COST SAVINGS, ANNUALLY IN THE U.S.[4]



NEARLY **7 OF 10 DRIVERS** DON'T MIND PERIODIC MAINTENANCE DELAYS IN RETURN FOR A SMOOTHER ROAD SURFACE.[6]

ENVIRONMENTAL **SAVINGS**

IF ROADS ACROSS THE NATION WERE SMOOTHER AND MAINTAINED IN GOOD CONDITION, ANNUAL VEHICLE FUEL CONSUMPTION WOULD BE REDUCED BY ABOUT **7 BILLION GALLONS**.[7]

SMOOTHER PAVEMENTS LEAD TO **4.5% LOWER** FUEL CONSUMPTION.[8] THAT'S ABOUT **13¢ PER GALLON**.[9]

MORE THAN 99% OF OLD ASPHALT REMOVED FROM ROADS AND PARKING LOTS IS RECLAIMED FOR USE IN NEW PAVEMENTS.[10]

APA ASPHALT PAVEMENT ALLIANCE

The APA is a partnership of the Asphalt Institute, National Asphalt Pavement Association and the State Asphalt Pavement Associations.

1 Smith, K.L., K.D. Smith, T.E. Hoerner, & M.I. Darter (1997). Effect of Initial Pavement Smoothness on Future Smoothness and Pavement Life. In *Transportation Research Record 1570*. TRB, National Research Council, Washington, D.C. **2** Edelman Berland (2013). Survey of 221 pavement stakeholders. Aug. 8–23. MOE ±6.6%. **3** Ihs, A. (2004). The Influence of Road Surface Condition on Traffic Safety and Ride Comfort. Presented at 6th International Conference on Managing Pavements: The Lessons, The Challenges, The Way Ahead, Oct. 19–24, 2004, Brisbane, Australia. Accident rate is number of incidents per 100 million axle pair kilometers; 9.5 incidents is the change in the accident rate from an IRI of 1 millimeter per meter to 5 mm/m at an annual average daily traffic (AADT) level of 8,000 to 12,000 vehicles. **4** Chatti, K., & I. Zaabar (2012). NCHRP Report 720: Estimating the Effects of Pavement Condition on Vehicle Operating Costs. Transportation Research Board of the National Academies, Washington, D.C. **5** Raymond, C.M., R. Haas, S.L. Tighe, & L. Rothenburg (2005). Analysis of Influences on As-Built Pavement Roughness in Asphalt Overlays. In Improving Pavements With Long-Term Pavement Performance: Products for Today and Tomorrow (FHWA-RD-03-049). Federal Highway Adminstration, McLean, Virginia. **6** Edelman Berland (2014). Survey of 3,085 U.S. Drivers, 18+. Mar. 7–13. MOE ±1.8% **7** APA (2011). Smoothness Matters. Asphalt Pavement Alliance, Lanham, Maryland. **8** Sime, M., S.C. Ashmore, & S. Alavi (2000). Tech Brief: WesTrack Track Roughness, Fuel Consumption, and Maintenance Costs (FHWA-RD-00-052). Federal Highway Administration, McLean, Virginia. **9** Assuming $2.85 for a gallon of gasoline. **10** Hansen, K.R., & A. Copeland (2014). 4th Annual Asphalt Pavement Industry Survey on Recycled Materials and Warm-Mix Asphalt Usage: 2009–2013 (IS 138). National Asphalt Pavement Association. Lanham, Maryland.