SUSTAINABLE PAVEMENTS

Description

National efforts in pavement design focus on environmental sustainability. Transportation departments may soon be federally mandated to incorporate carbon footprint reduction, noise reduction, and safety elements into all design and reconstruction projects.

Warm mix asphalt (WMA), technology that allows asphalt to be relatively cool when laid, leads these sustainable efforts. WMA reduces air pollution, saves energy, and increases worker safety and construction flexibility when compared to traditional hot mix asphalt (HMA). The Texas Transportation Institute has lead implementation research into WMA.

Permeable friction course (PFC) mixtures reduce traffic noise and improve visibility during wet weather conditions by draining water off the road through a porous surface. The picture above shows a dramatic difference in the amount of water splashed into a driver's vision.

Cost:	●●○○○
Time:	**Short**
Impact:	**Corridor**
Who:	**City/State**
Hurdles:	**None**

The next generation pavement mixtures are being designed to last longer and drain better than current mixtures. Partial and full depth recycling of existing pavements (using the existing road surface as part of the new road) also improves sustainability.

Target Market

- Freeway or street (re)construction projects or repaving projects

How Will This Help?

- Increase safety and traffic flow by improving drainage and reducing skids and noise
- Minimize environmental impacts, accelerate public acceptance and project plan approval
- Relatively low cost; the techniques save time, money, and resources

Success Story

- **Improving Visibility and Safety**
  IH 35 shown above in San Antonio was one of the first permeable friction courses used in Texas. The highway on the right is before treatment
- **Warm Mix Asphalt Technologies**
  US 281 in the Fort Worth District is the largest WMA project in the USA. TTI studies reported improved pavement quality.

Implementation Issues

Project designers, engineers, and contractors must be aware of the benefits and techniques of each and be encouraged to integrate them into new projects. These technologies are not special or significantly more costly; they should be used regularly. Though Texas is a leader in use, more can be done to save money.

For more information, please refer to: http://mobility.tamu.edu/mip/strategies.php.

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