Local Edition: Vol. 14, No. 4a
October 2008

LOCAL HIGHWAY TECHNICAL
NEWS

Local Highway Technical
Assistance Council
3330 Grace St.
Boise, ID 83703
344-0565/800-259-6841
www.lhtac.org

Edited by: LHTAC Staff

# Just for Street and Road Workers:
## A Checklist of Shoulder Maintenance Issues

The table below shows some shoulder maintenance issues from Chapter 4 of the *Iowa Local Roads Maintenance Workers' Manual*. The manual was developed by CTRE and sponsored by the Iowa Highway Research Board (TR-514). The series began with the July–August 2006 issue of Technology News. Previous topics included maintaining gravel road and identifying and repairing asphalt and concrete pavement distresses.

| Potential Problem | Why a Problem? | Possible Cause(s) | Maintenance activities |
|---|---|---|---|
| High shoulder | • Creates a safety hazard for drivers.<br>• Restricts drainage away from the roadway. | • In earth shoulders that were originally flush with the adjacent roadway, vegetation collects sediment and gradually breaks down, raising the shoulder height.<br>• May occur in gravel shoulders in which vegetation has been allowed to grow. | • Earth and gravel shoulders: Reshape and compact in accordance with the original design.<br>• If vegetation is part of the problem, break up roots with a mechanical mixer and follow with blading. |
| Low shoulder, or shoulder (edge) drop-off | • Creates a safety hazard for drivers (edge drop-offs are among the top crash-related conditions and commonly used bases for tort claims).<br>• Allows water to penetrate into the subgrade. | • Poor drainage.<br>• Erosion of uncompacted shoulder materials (earth or gravel).<br>• Settlement (asphalt or concrete). | • Earth and gravel shoulders: Refill, reshape, and compact in accordance with the original design.<br>• Low paved shoulders: Place a fillet (usually asphalt) along the pavement edge at an approximately 30-degree angle to shoulder.<br>• **Note: An edge drop-off greater than two inches is generally considered excessive; consult your supervisor and follow your agency's policy.** |
| Erosion | Exacerbates poor drainage. | Poor drainage. (Earth or gravel shoulders with steep slopes are especially susceptible to erosion.) | |
| Secondary ditch | Can cause structural damage related to drainage that may result in the need to rebuild the roadway. | • Excessive throw-off of material from gravel roads.<br>• Heavy vehicles driving on the shoulder. | |
| Vegetation | • Can inhibit drainage, resulting in the formation of secondary ditches.<br>• Can collect debris, eventually encroaching on and narrowing the driving lane(s).<br>• Can cause snow to drift in the roadway.<br>• Can create unsafe conditions for vehicles that leave the roadway. | Inadequate mowing or trimming of shoulders. | • Mow earth shoulders regularly, trimming thoroughly along the pavement edge.<br>• **Note: Be alert for abandoned materials from methamphetamine-manufacturing labs.** These hazardous materials require special handling. Consult your supervisor, and follow your agency's policy. |
| Driveways | Shoulder maintenance activities can affect the road design where the driveway and shoulder connect, interfering with drainage. Be careful to maintain the designed drainage point at driveways. | | |

**For more information:** See Chapter 4 of the *Iowa Local Roads Maintenance Workers' Manual*. To borrow a copy of the manual, contact Jim Hogan, LTAP library coordinator, 515-294-9481, hoganj@iastate.edu.

*Reference: Technology News, Iowa LTAP, March-April 2008*