



Here's Why Your Favorite Road Meanders

Our country roads took a long time to get here, but it was worth the wait.



Picture your favorite county road as it tunnels through the woods, shadows a stream or meanders peacefully across lush farmland. Did you ever wonder how something man-made could look so natural, like it has always been there?

Well, there's a good chance the road's original surveyor was a buffalo or deer. You can't get much more natural than that.

"The primary means of transportation for both Native Americans and early settlers was water," explains Rebecca Bowman, a civil engineer, attorney and history buff from McMurray, Pennsylvania.

Dense forests and vast wetlands covered most of the eastern half of the country. So when people had to travel by land, they followed animal trails. When the need arose to haul cannons or trade goods through the woods, they simply widened the trails.

"That seems like a haphazard way to lay out a road, but it was really very smart," Rebecca explains. "If you think about it, animals don't take unnecessary risks or make extra work for themselves. They had long ago figured out the shortest, safest and easiest path."

The earliest roads out into the frontier were built by the military to stock remote forts. But as cities grew, trade warranted construction of commercial routes.

Piker and Bare Dirt

In the early days, roads were private commercial ventures

owned by investors and funded by tolls. "The word 'turnpike' comes from the practice of driving metal spikes into the road, so you had to turn off and go through the tollboth," Rebecca says. "Pikers were people who trespassed on private land to avoid paying the tolls."

Early travelers often had good reason for being grumpy, though. The roads were generally just packed rutted dirt, except in the spring, when they turned into muddy quagmires.

"It's common to see diary accounts of stagecoach rides where passengers had to get out and push the coach or repair the road," says Tim Crumrin, associate director and historian at Conner Prairie, a living history museum in Fishers, Indiana.

"Many roads were just clearings in the forest. In Indiana, to legally be called a road in the early 19th century, you just had to cut the tree stumps low enough so wagon axles could clear them. Building an actual paved road through the wilderness was a daunting task."

Road building in America took its first tentative step toward modern times in 1806, when President Jefferson pushed through legislation to build a road from Maryland to the Mississippi River.

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The National Road

“Unlike previous roads that were built and sustained by commerce between existing cities, Jefferson’s idea was: If we build it, they will come,” says Rebecca. “They really went out on a limb.”

Financed by the sale of federal land in the states it crossed, the rock-based road took more than 3 decades to inch across Maryland, Pennsylvania, Ohio, Indiana, and Illinois, following approximately the same path as today’s U.S. 40.

Widely viewed as a serious abuse of the federal government’s constitutional powers, the National Road remained politically controversial until control and maintenance were eventually ceded to the states. But the road was an unqualified success from a commercial standpoint.

Observers noted that traffic looked like trains rolling down the road, with wagons packed so closely together that horses could eat oats from the wagon in front of them. Inns, blacksmith shops and stores sprang up along the road like a bumper crop of wheat. And every farmer, town and city realized their futures depended on these ribbons of gravel.

The first section of the National Road followed a military road surveyed by young George Washington, who followed—an old buffalo trail. But the Age of Enlightenment and scientific thinking was about to put an end to that.

“In olden days, land deeds included

boundaries like: ‘from the creek to the big oak tree to the top of the ridge.’ In the 1800s, they started surveying land into uniform grids, so boundaries weren’t in dispute every time a tree blew down,” explains Tim Crumrin.

Grid System

“With land divided into square-mile sections, it made sense to run the new roads along property lines. Jogs in country roads are usually surveyor errors or closing corners. And roads that meander around are probably based on an older road that followed the path of least resistance.”

Meanwhile, a Scotsman named McAdam figured out how to build a gravel road that wouldn’t sink into the mud. And in the 1870’s, road builders developed the first formulas for commercial petroleum-based asphalt.

With limited resources, however, rural roads remained a grassroots effort well into the 20th century, Tim notes. “Instead of paying road taxes, farmers spent a couple days a year clearing trees and hauling gravel.”

Even after the automobile age kicked construction into overdrive, many rural residents slogged along dirt roads well into the 1950s.

So, next time you’re enjoying the scenery on your favorite country drive, pause for a moment to appreciate the road itself. It’s been a long time in the making.

Reference: Country Extra, November 2005

New Members At LHTAC

We would like to welcome two (2) new members that will be serving on the Local Highway Technical Assistance Council (LHTAC). Mayor Shawn Larsen, City of Rexburg **Welcome** has been appointed by the Association of Idaho Cities and Commissioner R. Tad Hegsted, Jefferson County has been appointed by the Idaho Association of Counties.

We would like to thank Mayor Linda Milam, City of Idaho Falls and Commissioner Brooke Passey, Madison County for their time served on the Council.

We look forward to working with all of our council members, and to an exciting year.

10 TIRE TIPS For Tire Life And Work Safety

1) Under-inflation costs money

Operating on soft tires means they wear faster and the truck burns more fuel. At normal speeds, you'll cut tire life by 16% and increase fuel use by 2% by running tires at 20% under recommended pressure.

2) Explosion is possible

Any radial tire that has been driven at less than 80% of its recommended pressure has the potential to "zipper rupture" when it's re-inflated. A zipper rupture is when the side of a radial tire explodes during inflation. You can learn to recognize hazardous tires and how to re-inflate them safely from videos or in training programs.

3) Expect tires to lose air

Rubber tires are made of a porous material; they lose air continuously. A truck tire is expected to lose up to two pounds a month according to industry standards. In addition, air can leak through valve caps or small punctures.

4) Think about outside temperature

A tire will gain or lose a pound of pressure with every 10 degree difference in outdoor temperature.

5) Know the proper pressure

Tires are designed to run at specific pressures based on the total load. Gather information on each truck's actual axle load, then use standard load charts to calculate the correct tire pressure. Ask your tire supplier for help and training. (See load charts at www.goodyear.com/truck)

6) Calibrate gauges monthly

Even with regular checking, tires could be at the wrong pressure due to faulty gauges. Invest in a master gauge (about \$100) and calibrate all the gauges in

the shop monthly.

7) Check pressure every season or before use

You should check tire pressure every season at a bare minimum, but more often is better. For infrequently used or seasonal equipment --like motor graders-- check tire pressure before using. To get an accurate reading, be sure the tire is cold; at least three hours after the last use.

8) "Read" tires regularly

Check for signs of wear before tires sustain serious damage. Regularly look at tire walls for signs of zippering; inspect for cuts, cracks, blisters, or bulges. Measure tread depth. (It should be no less than 4/32" on the steer axle and no less than 2/32" on all others.) Run your hand over the tread and feel for abnormalities like rib edge feathering or cupping. Feathering is an early sign of misalignment or could be caused by improper pressure. Take the tire/wheel assembly off and look at the face of the tire for any type of irregular wear pattern. For example, drive tires may develop heel and toe wear.



9) Rotate tire position for longer life

Any rotation schedule is better than no rotation. How often it's needed depends on truck usage.

10) Repair correctly

The only proper way to fix a tire is to put a patch on the inside and a plug through the injured area. Any repair from the outside will void the tire warranty, even if it is properly fixed afterwards. Up to 40% of tires in use are incorrectly repaired.

Reference: MASS INTERCHANGE, Fall 2005

Print Retraction

LHTAC printed a Sidebar article in our December 2005 Newsletter (pages 10 & 11) titled: "Bill Gates' Speech To Mt. Whitney High School in Visalia, California". We later discovered that this article did not originate with Microsoft head Bill Gates. Why it's attributed to Gates is a mystery. We apologize and retract this article.

*** In an effort to reduce paperwork and cost, LHTAC is offering to provide this publication in a digital format. If you would prefer a digital copy of this publication instead of a printed copy please notify us by letter or E-mail. Please send your request to Cindy Stewart at our regular mail address or E-mail her at: cstewart@LHTAC.org.***

If you had to identify, in one word, the reason why the human race has not achieved, and never will achieve, its full potential, that word would be "meeting."



The Great Drain Robbery

Even if it's nailed down, thieves are stealing government property to sell for scrap.



Local government officials are flipping their lids. Manhole covers—as well as other metal fixtures including parking meters and guardrails—are disappearing from city streets at alarming rates. The reason is the rise in demand for scrap steel and aluminum, driven largely by a construction boom overseas.

China now represents about a third of the global steel market and accounts for virtually all of the growth in demand. And that growth is enormous. As a result, scrap steel prices have quadrupled over the past few years. Several U.S. cities have seen a hundred or more of their manholes stripped bare.

Public works officials are frustrated by the trend, noting that it costs them up to \$100 to replace each manhole cover, while thieves are lucky to make even a few dollars from each sale. But that's proven to be enough of an incentive for drug addicts or others who are desperate for cash.

What's especially worrisome, says Bob Ellinger, sewer maintenance manager for Columbus, Ohio, is not just the replacement costs but the danger posed by "dark spots" that people or cyclists could easily fall into. It used to be that Columbus saw just a couple of covers go missing in a year—usually after an especially good party weekend at Ohio

State University—but during one recent month alone, the city lost 46 storm water grates and sewer drain covers.

About 150 manhole covers also have gone missing in Chicago, while Pittsburgh has lost about 400 parking meters. John Cichowski, a columnist with the Record in Bergen County, New Jersey, has made something of a crusade out of the fact that 12,000 linear feet of heavy-duty aluminum guardrails have been ripped off from the sides of Paterson-area highways. The replacement cost is "just a drop in the bucket," he writes, "until it's our car that's dropping over an embankment because some drug addict recognized a different kind of value."

The problem gets far worse the closer you get to the source of the demand. Some 5,000 covers have been stolen in Shanghai since the beginning of 2004, with even more taken from the streets of Beijing and Calcutta. In both China and India, officials are experimenting with non-metal materials, but apparently even concrete models are being stolen by thieves eager to get at the metal framing rods.

Theft shouldn't be such a problem, say spokesmen for the recycling industry, because a licensed scrap dealer won't touch, say, a huge metal disk that has the city name clearly stamped on it. "If people are stealing them, they may be pawning them off as antiques," says David Krohne, of the Institute of Scrap Recycling Industries, "but no reputable dealer is going to touch them."

But not every dealer, of course, is so upstanding. Hundreds of manhole covers aren't suddenly disappearing because of a boom in the antiques markets. There's clearly

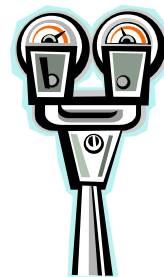
money to be made in metal, so scrap will find ready, if sometimes shady, buyers as it changes hands numerous times on its way from Columbus to China.

That's why city officials in many places are working with local media to publicize the problem. In Akron, public works staff met with reporters from all the local newspapers and broadcast outlets. "We feel that all the press that we got scared the people off," says Jim Hewitt, a sewer maintenance superintendent. "The problem has pretty much gone away."

Media coverage undoubtedly helped, but probably a bigger factor was a police sting that nabbed two men, including a metal dealer who wasn't keeping required records of transactions and had in his yard a couple dozen city water meters, believed to have been stolen from vacant houses.

In most such cases, thieves are forced to pay restitution and may receive probation. Given the extent of the problem, however, perhaps some judges will revive the sort of sentence that Paul Newman received in "Cool Hand Luke" for decapitating two rows of parking meters: a couple of years on a chain gang. That's assuming, of course, the steel links haven't been sold for scrap.

Reference: Governing Magazine/July 2005



Tips For Designing Bike Lanes On Your Roads

...By Courtney Hansen.....

As gas prices climb higher and higher, alternate means of transportation become more appealing. Unfortunately, people who would like to use a bicycle for transportation face many challenges: long commutes, discourteous drivers, and a lack of protection from the elements. One challenge bicyclists shouldn't have to face, however, is a lack of space in which to ride. This article will outline the process and considerations that go into creating bike lanes on existing roads.

For each of the many kinds of roads in existence, there is an appropriate form of bike facility, and an appropriate use for it. A bike lane is one such kind of facility. Bike lanes are most useful on roads which meet the several conditions: The road has a posted speed of 30 mph or greater, combined with a traffic volume of more than 2,000 vehicles per day, and the bike lane provides linkage on both ends to further bikeways. Bike lanes are especially suited to roads that carry large numbers of large vehicles such as trucks, RVs, and buses, and in areas that carry heavy bicycle traffic. Bicycle lanes should be between 4 and 6

feet wide, with wider bike lanes on faster roads. They should also be designated one-way, except in special conditions, which means that bike lanes should be built on both sides of the road. Bike lanes should be designated with pavement stencils and a solid white stripe, per the *Manual on Uniform Traffic Control Devices*, (MUTCD).

A major safety issue with bike lanes is found at intersections. Factors to consider include guiding bicyclists and motorists through turns safely and the potential for confusion caused by numerous broken lines through an intersection. Another safety consideration is the fact that bicyclists cannot clear many roadway obstacles in the same way cars can. For example, a cyclist must approach railroad tracks nearly perpendicularly, while automobiles can cross the tracks at an angle. Improperly designed rumble strips and drainage grates in the bike lane can also create hazards for bicyclists.

Creating a bike lane with these considerations in mind will improve

the bicycling experience and encourage new bicyclists to take to the roads. The new bike lanes will give bicyclists (and motorists) one less thing to worry about.

Detailed information on the treatment of bike lanes and intersections can be found in both the MUTCD and in AASHTO's *Guide to the Development of Bicycle Facilities*.

Reference: KUTC Newsletter, Winter 2004



Bike Lane Guide Available On-Line

A great resource about bike lane design is available for free on the internet. The Pedestrian and Bicycle Information Center (PBIC) has teamed with the City of Chicago and a citywide bicycling federation to produce this guide to signing, striping and marking bike lanes on city streets. Its 48 pages include full-page technical drawings and shows how Chicago installs bike lanes on streets as narrow as 44 feet with parking on both sides.

The guide also features six pages of answers to frequently asked questions about bike lanes and information about how your particular city's standards might differ from Chicago's. The PBIC claims its guide "addresses every reason, fear, excuse, or other barrier to getting bike lanes on your city's streets."

The PBIC also offers a guide to assist a road department in choosing the appropriate facility for any given street or traffic situation, whether a bike lane or another kind of facility. It is also available on-line.

Both publications can be found at: www.bicyclinginfo.org/de/bikelaneguide.htm. The bike lane guide is divided into two parts to facilitate faster downloading.

-Are You MENSA Material—Take A Quick Test

1. What do you put in a toaster?

The answer is bread. If you said "toast", then give up now and go do something else. Try not to hurt yourself. If you said, "bread", go to question 2.

2. Say "silk" five times. Now spell "silk." What do cows drink?

Answer: Cows drink water. If you said "milk", please do not attempt the next question. Your brain is obviously over-stressed and may even overheat. It may be that you need to content yourself with reading something more appropriate such as "Children's World". If you said, "water" then proceed to question three.

3. If a red house is made from red bricks and a blue house is made from blue bricks and a pink house is made from pink bricks and a black house is made from black bricks, what is a greenhouse made from?

Answer: Greenhouses are made from glass. If you said "green bricks", what the heck are you still doing here reading these questions? If you said "glass", then go on to question four.

4. Twenty years ago, a plane is flying at 20,000 feet over Germany. If you will recall, Germany at the time was politically divided into West Germany and East Germany. Anyway, during the flight, TWO of the engines fail. The pilot, realizing that the last remaining engine is also failing, decides on a crash landing procedure. Unfortunately

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Bosses' Top 10 Pet Peeves



Getting the job done is a two-way street. Everyone has pet peeves—things that really bother them. If you want to stay on your boss's good side, don't do things that are irritants. Here's what makes most managers' blood boil.

Bad attitude. This is a top peeve; bosses notice when employees take on a passive/aggressive attitude or lack courtesy when interacting with others.

Whining. Don't be a complainer. There's a difference between constructive criticism and being a whiner. Whiners often focus on the negative side of events or tasks.

Delegating up. If you've been given responsibility for decisions or projects, take it to heart. Bosses delegate for a reason. If a decision seems tough, don't send it back to your boss for him or her to make. Most bosses believe that even if you make a bad decision, you still learn and grow.

Withholding information. If you have bad news to deliver to your boss, don't withhold it. They often need this information to manage effectively. Don't be afraid of a "kill the messenger" reaction. Most bosses will

be grateful for the information.

It's not my job. Regardless of efforts to build teams in the workplace, there are still plenty of employees who are reluctant to pitch in. Bosses always remember who does and doesn't help out.

Lack of dependability. Don't be the type of employee who doesn't come in on time or doesn't call in when sick. Communicate with your boss.

Myopia. Every company has a big picture under which it operates. You don't exist alone. Keep in mind what the department does and how you are contributing to the overall goals.

Overreacting. The workplace is in constant flux. Be flexible and don't overreact to every change.

Bickering. Few things grate on bosses' nerves more than having to baby-sit employees who bicker and fight. Try to solve problems between yourself and co-workers on your own.

Unrealistic expectations. Employees who think that things will always be the same in the workplace or that the budget won't affect the workplace environment are unrealistic and annoying. Change is inevitable.

Reference: KUTC Newsletter, Summer 2005

Meth Labs: Keep An Eye Out

As methamphetamine, a potent stimulant more commonly known as meth, increases its hold on Minnesota, the public is increasingly in danger of being exposed to toxic byproducts of meth labs. The Minnesota National Guard recently published a brochure listing the dangers of meth, as well as warning signs of a meth lab in your neighborhood.

Meth is one of the most rapidly spreading drugs in the United States, and also one of the most dangerous, for several reasons:

- ♦ Chemical and fume residues contaminate houses, apartments, hotel rooms, and remote areas where meth is "cooked." These residues can cause cancer, brain damage, and immune and respiratory system problems, threatening neighbors and residents for years.
- ♦ Toxic wastes are usually improperly disposed of in ways that endanger the community: poured down drains or storm sewers, or dumped along county highways.
- ♦ High rate of addiction, as well as cardiac and neurological damage to users. It also contributes to violence, child neglect or abuse, car accidents, and the spread of disease when injected.
- ♦ Labs can cause explosions and fires.

To minimize the effect meth will have on your community, keep an eye out for some characteristics of meth labs and manufacturers:

- ♦ Houses or apartments with frequent visitors and activity around the clock.
- ♦ Occupants who exhibit unfriendly, paranoid, or otherwise odd behavior.

- ♦ Desire for secrecy, including curtains that are always drawn, blackened windows, fences, large shrubs, or trees that hide house.
- ♦ Occupants who smoke outside the house.
- ♦ Chemical fumes.
- ♦ Items such as charcoal, solvents, propane tanks, many cold medicine packages, plastic storage containers, batteries, discolored coffee filters, and cat litter in the garbage, which may be set out for collection in someone else's pick up area. Wastes may be dumped in yard, as evidenced by "dead spots" in the grass.
- ♦ Hotels should watch for nervous customers that pay with cash, have burn scars, discolored teeth, strange luggage (such as plastic containers), no vehicle, and decline housekeeping services. Hotels should also pay attention to strange smells, stains, residues, and containers in the room.

Source: *Methamphetamine Labs Neighborhood Resource Guide*, [Minnesota National Guard Counter-drug Program](#).

Reference: *Technology Exchange*, Summer 2005



Continued from Page 6....

the engine fails before he has time and the plane crashes smack in the middle of "no man's land" between East Germany and West Germany. Where would you bury the survivors—East Germany or West Germany or in "no man's land"?

Answer: You don't, of course, bury survivors. If you said ANYTHING else, you are a real dunce and you must NEVER try to rescue anyone from a plane crash. Your efforts would not be appreciated. If you said, "Don't bury the survivors" then proceed to the next question.

5. If the hour hand on a clock moves 1/60th of a degree every minute then how many degrees will the hour hand move in one hour?

Answer: One degree. If you said "360 degrees" or anything other than "one degree", you are to be congratulated on getting this far, but you are obviously out of your league. Turn your pencil in and exit the room. Everyone else proceed to the final question.

6. Without using a calculator— You are driving a bus from London to Milford Haven in Wales. In London, 17 people get on the bus. In Reading, Six people get off the bus and nine people get on. In Swindon, two people get off and four get on. In Cardiff, 11 people get off and 16 people get on. In Swansea, three people get off and five people get on. In Carmathen, Six people get off and three get on. You then arrive at Milford Haven. What was the name of the bus driver?

Answer: Oh, for heaven sake! It was YOU, read the first line!!!

Local Highway Technical Assistance Council
 3330 W. Grace St.
 Boise, Idaho 83703

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LHTAC NEWSLETTER

MARCH 2006

CALENDAR OF EVENTS

April 11, 12, 13	Excelling As A First-Time Supervisor	Boise, Twin Falls, Pocatello, ID
April 12-13, 18-19	Speed Limits & Speed Zones	Pocatello, Moscow, ID
April 18-19	How To Communicate With Tact And Professionalism	Boise, ID
April 19	Current Issues In Stormwater Regulation In Idaho	Boise, ID
May 1-2	How To Successfully Manage Multiple Locations	Boise, ID
May 4-5, 18-19 June 19-20	Management & Leadership Skills For First-Time Supervisors & Managers	Idaho Falls, Boise, Lewiston, ID
May 17-18	Roundabout Applications	Seattle, WA
May 23-24	Improving Stormwater Management Using Low Impact Development (LID) Practices	Everett, WA
June 5-6	Implementing Phase II: NPDES Permit	Seattle, WA
June 14-16	Association of Idaho Cities 59th Annual Conference	Lewiston, ID

*If you are interested in additional information regarding any of the above referenced meetings and/or training sessions, please contact LHTAC at 1-800-259-6841 or 208-344-0565, Email LHTAC@LHTAC.org.
 This publication is available on our Website www.LHTAC.ORG*