ENGINEERING

2009 ANNUAL REPORT

LARIMER COUNTY
COMMITTED TO EXCELLENCE

PUBLIC WORKS DIVISION

Engineering Design, Bridges, Survey, Construction Management, Traffic, Development Review, Stormwater and Floodplains, Asset Management, Right of Way, Improvement Districts, and Permitting

Engineering A Better Future For Larimer County

A Message from the Department Head

Countywide Engineering

We often think of Larimer County as a diverse combination of urban and rural, modern and rustic, mountains and plains. The Front Range corridor is bustling and growing while the far reaches of the county are remote and quiet.

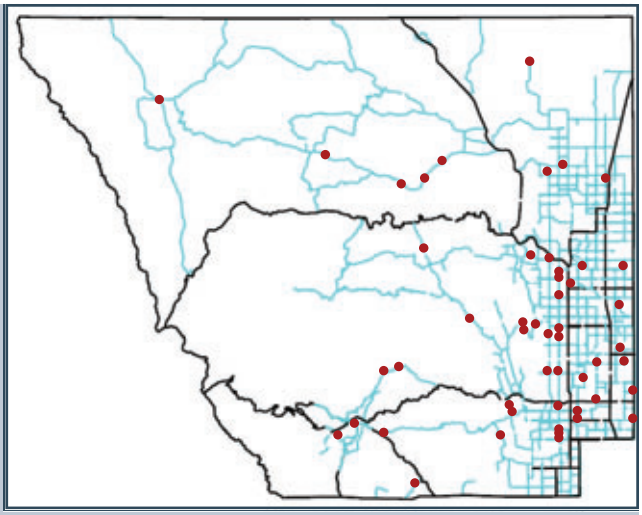
Yet the business of planning, designing, building, preserving and improving the transportation systems in the county covers all these extremes. The department staff is adept at working within the various environments during all 12 months of the year (i.e. paving during warmer weather and building bridges in the winter when water flows are low).

Whether we're undertaking complex urban road alignments in constrained areas, or basic infrastructure improvements involving culverts, gravel surfacing and planting tree seedlings in the mountains, our staff has both experience and a unique understanding of the special characteristics of the various areas. We often take projects from conceptual ideas to completed construction.

As you'll note from the article below and the statistics on the last page, we devote considerable time and effort responding to citizen questions or requests. In all of our activities, we strive to meet the needs of our citizens. I welcome your input and comments about how we are doing and where we could improve. See the back page for our contact information.

The strength of our organization is our people. Each day, I have the privilege of working with a dedicated, experienced and talented group of people - who work hard to make Larimer County a better place, both now and in the future.

Mark Peterson, PE
Engineering Department Head



This graphic of Larimer County indicates the locations of major Engineering Department efforts during 2009. Our staff travels far and wide to address the needs of County citizens. Graphic: Michelle Jenkins

The Important Voice of Citizens

The key objective for the Engineering Department is to improve the lives of Larimer County citizens. Listening to, understanding, working with, and including citizen input into our work is a critical component to meeting that goal.

Every day, department staff on average receives more than 20 phone calls, emails or in-person inquiries about everything from floodplain maps, right-of-way questions, traffic signing requests, and development inquiries to improvement district queries. Staff listens, researches, and responds to every single one; many require follow up work.

Larimer County's traffic staff meet with residents in an area of safety concern. Photo: Bob Rising

The Tunnel Road bridge deck in Estes Park was replaced in halves to maintain access to residents and businesses during construction. Photo: Preston Pierson

Sometimes citizen interests and comments become projects. In Red Feather Lakes, the Planning Advisory Committee (PAC) worked with staff to begin addressing complicated road right-of-way issues. Along State Highway 14 east of I-25, citizen concern resulted in a unique partnership between three entities and several private developers to fund two traffic signals.

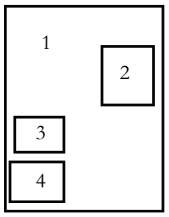
Citizen input can also help shape the approach or type of work. In Estes Park, staff used area resident input to choose a bridge construction technique so Tunnel Road would remain open during construction.

Whether we are choosing road names for the rural addressing project or developing maintenance plans for improvement districts, citizens are a key team member or important component to the work we do.

"Everyone I've heard from since the work was completed is very appreciative of the results. So more kudos to you and your team!"

Citizen Bob Rising regarding resolution of a citizen concern.

On The Cover:



1. *Construction of Poudre River Trail Underpass at SH 392. Project funded with stimulus funds. Photo: Charlie Johnson*
2. *CR 9/CR 30 roundabout intersection. Photo: Charlie Johnson*
3. *Poudre River Trail Underpass at SH 392. Photo: Charlie Johnson*
4. *Design Work. Photo: Charlie Johnson*

Keeping Track and Measuring Performance

More and more governmental agencies are beginning to utilize an outcome based budgeting process and Larimer County is no different.

The Engineering Department has been moving towards performance measures for a number of years. Keeping track of various measures not only provides a basis for funding requests, but also allows for a greater understanding of the issues and aids in project prioritization.

Summer interns hired by the Engineering Department inspected all 1,000 miles of road during the summer of 2009. Annual inspection of the entire roadway system allows for consistent performance measure each year. Photo: Brian Fraaken

The Shields Street bridge over the Poudre River carries more than 8,000 vehicles per day. Water scouring around the bridge pier has been identified as a concern. Since funding will not allow bridge replacement until 2014, monitoring equipment is being installed to track erosion and movement until replacement takes place. Photo: Ron Winne

Transportation Report Card

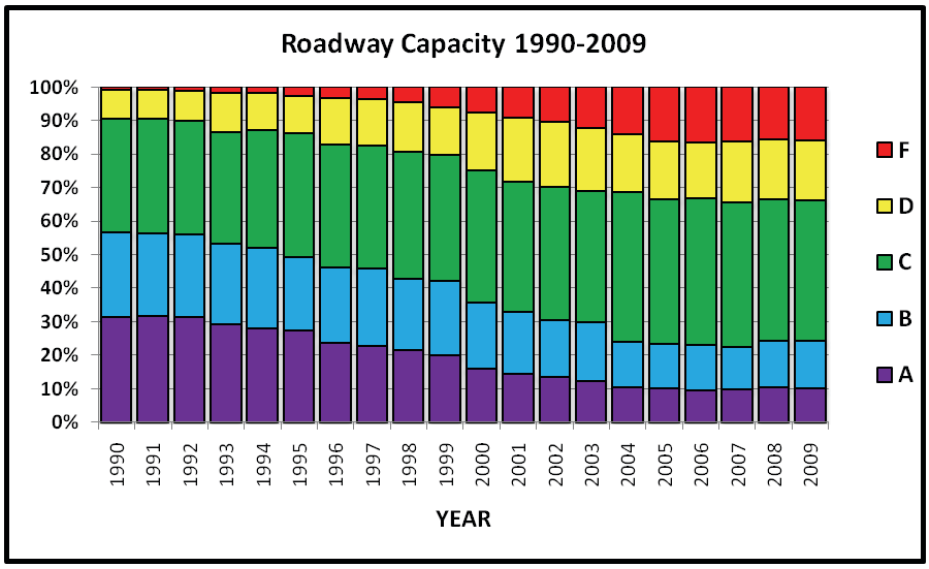
Larimer County Public Works maintains a transportation report card that assigns a letter grade each year to the roadway system for three metrics:

Road Capacity
Road Condition
Road Safety

The road capacity measures the amount of traffic on a road compared to the theoretical amount it could carry and is an indication of potentially needed capacity improvements.

The road condition grade is based on a physical inspection of the road and reflects how well a road is maintained. The department expanded the road inspection program during 2009 so all roads are inspected every year which provides more complete and current data.

The road safety grade reflects an analysis of accident data (crashes) when adjusted for volumes along each road. An annual Safety Report (the first of which was completed for 2009) comprehensively tracks and analyzes safety on the county road system and can be used for year-to-year comparison.



This graphic represents the allocation of levels of service for roadway capacity for the past 20 years. The grade is a comparison of the amount of current traffic to the limit of traffic that the road could carry. Roadways with grades of D or F may require capacity improvements in the future. In 1990, less than 10% of the roadway system had a grade of D or F in terms of capacity. Today, that percentage has risen to more than 30%. Graphic: Brian Fraaken

"Funding for road and bridge infrastructure is still inadequate!"

County manager Frank Lancaster in his annual budget memo detailing funding concerns for the future.

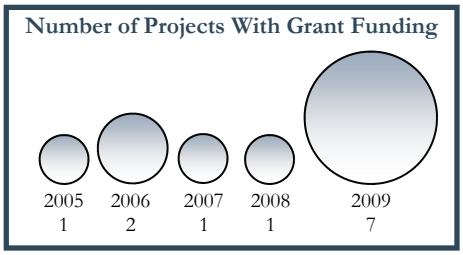
Tracking Bridge Condition

The department's bridge engineer maintains a complete database of the more than 640 structures in the County. Issues that are identified in the bridge inspection program can then be addressed.

For example, an annual inspection of the CR 17 (Shields Street) bridge over the Poudre River in North Fort Collins identified a potential scour concern, which occurs when flowing river water begins to undermine the bridge pier in the water. Monitoring equipment is being installed on the pier to keep track of the issue until the bridge is replaced in 2014.

Leveraging Dollars At Every Turn

As funding for the road infrastructure continues to lag behind increasing needs, department staff has re-dedicated efforts to pursue and leverage multiple funding sources as they are available. The number of projects at least partially funded with grants or other outside sources has increased dramatically.



Stimulus Dollars

The federal American Recovery and Reinvestment Act (ARRA) provided more than $ 4 million dollars for two County projects. The CR 17 overlay project improved almost 10 miles of the road in four jurisdictions. This highly successful partnership project was featured on the cover of the National Association of Counties newspaper and received the National Asphalt Pavement Association award for Quality in Construction.

Hazard Elimination Projects

The County successfully applied for and received $470,000 for four projects to address specific spot safety issues. Those projects will be constructed during 2010 and 2011.

Transportation Enhancements

A Transportation Enhancement grant is addressing pedestrian and bicycle mobility concerns in LaPorte in the vicinity of the schools.

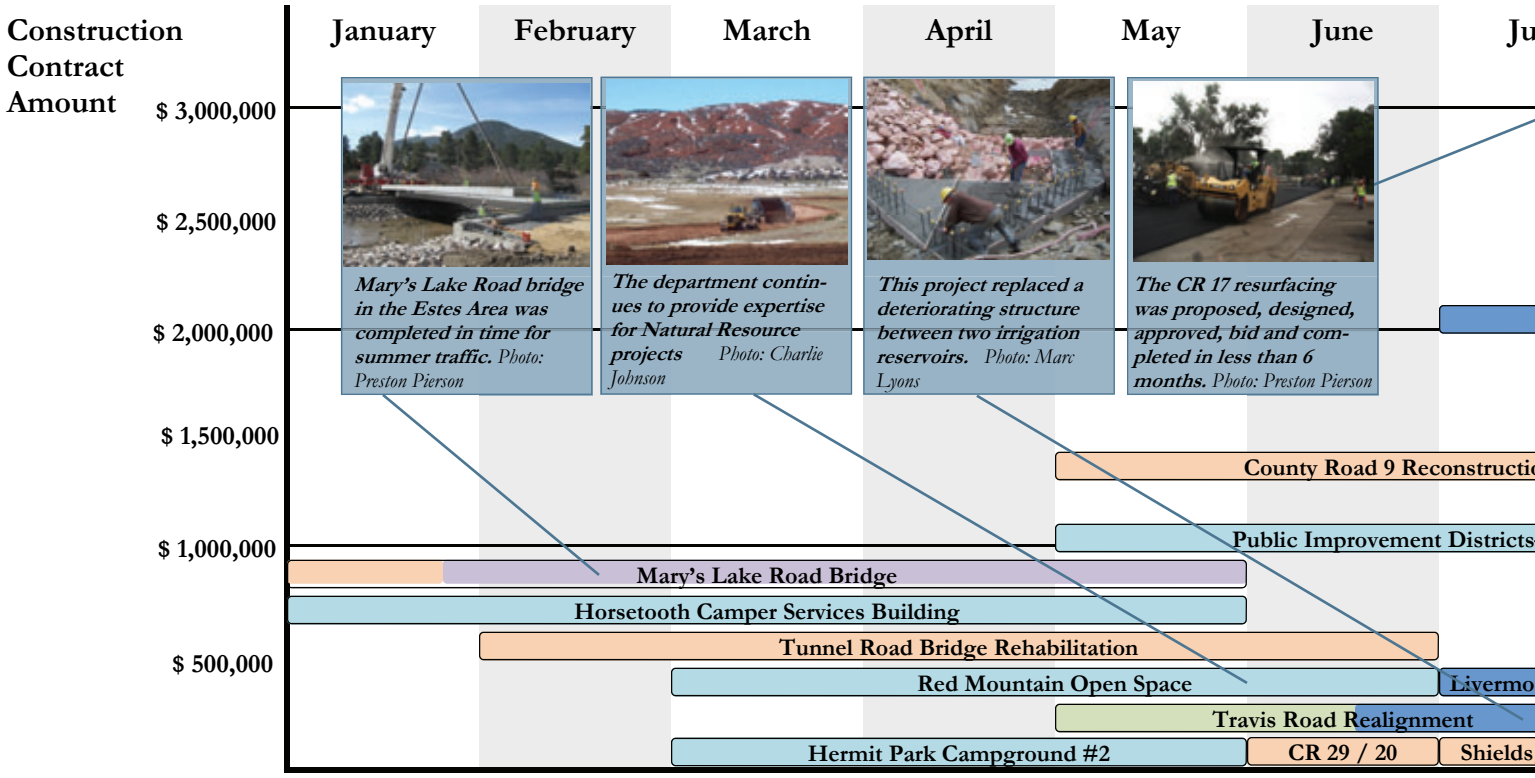
FASTER Funding

County staff worked closely with state transportation officials to allocate some of the new state transportation safety funding towards studying and initial improvements to State Highway 287 between LaPorte and Wyoming.

This curve along CR 27 has been the location for 6 crashes causing injury in just 3 years. A Hazard Elimination and Safety grant from the State will fund a road re-alignment project to eliminate the curve. Photo: Joe Temple

This outdated irrigation ditch crossing will be replaced using a Federal Transportation Enhancement grant. After completion, students walking or biking to schools in LaPorte will have an improved route to school. Photo: Kyle Arend

Larimer County Engine



Working with Others Accomplishes More Than We Could Do Alone

Larimer County includes eight incorporated jurisdictions, an extensive state highway system, and sits adjacent to three neighboring Colorado counties. From both a logical and financial standpoint, working with our partners to accomplish similar goals is advantageous.

County Road 9 between Fort Collins and Loveland

The Larimer County Engineering Department identified a need to reconstruct County Road 9 between State Highway 392 and County Road 30 due to poor pavement condition. The overall project improvement was significantly enhanced by two partnerships:

At the north end of the corridor at SH 392 the State Department of Transportation recognized a need for an auxiliary turn lane. The state applied for, and received Hazard Elimination funding to construct the lane.

At the south end of the corridor, the intersection at CR 9 and CR 30 had a history of long delays and significant safety concerns. Since the intersection is jointly owned by Larimer County and the City of Loveland, each entity contributed towards the construction of a modern roundabout.

SH 14 Signals

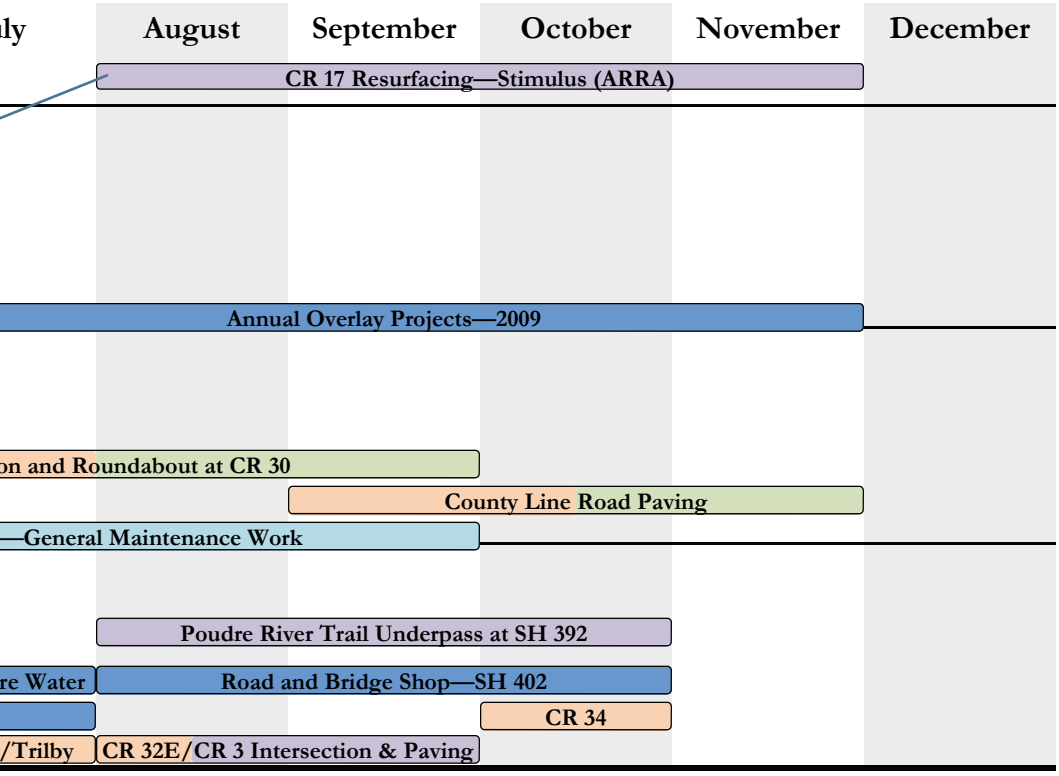
After several traffic fatalities, citizens in the area of State Highway 14 east of I-25 were determined to initiate change, but area entities did not have sufficient funding to address the issue. Ultimately, a carefully crafted partnership between Department of Transportation, City of Fort Collins and Larimer County combined in-kind staff time with funding from Hazard Elimination, capital expansion, and development agreements to construct two traffic signals.

County Line Road Project

Larimer County worked together with Weld County to pave the section of County Line Road between US 34 and CR 26 (Crossroads Boulevard). This section of road completes an important link between various local destinations and provides a regional parallel arterial to I-25.

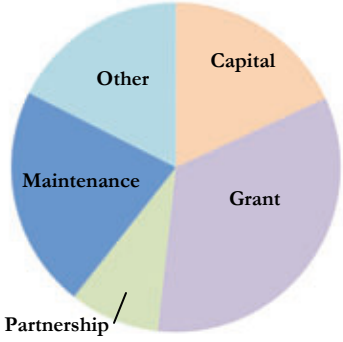
The new roundabout at the intersection of CR 9 and CR 30 was jointly funded by Loveland and Larimer County. The improved intersection addressed both a capacity and serious safety issue.
Photo: Martina Wilkinson

eering—Year at a Glance



Funding Overview

Capital Dollars	$ 2.56 million
Grant	$ 4.76 million
Partnership	$ 1.25 million
Maintenance	$ 3.09 million
Other	$ 2.48 million
Total 2009:	**$ 14.1 million**



Staff Professional Development

The Engineering Department staff is a high level professional group of individuals with tremendous experience and expertise. Their ongoing professional development efforts adds significant value to the County.

Continuing Education

Engineer Matt Johnson was awarded a scholarship by the Colorado Asphalt Paving Association (CAPA) to attend a week long program at Auburn University in Alabama to learn about the state of the art practices in asphalt paving design. This type of continuing education benefits many of our projects.

Specialized Certification

Engineer Eric Tracy completed the requirements including successful completion of an exam to become a Certified Floodplain Manager (CFM).

This national program and resulting certification recognizes continuing education, state of the art practices, and knowledge of current regulations to aid jurisdictions in managing and mitigating flood risk.

In coming years, if a community rating system is implemented, having a CFM on staff may allow for reduced flood insurance premiums countywide.

Reaching Out!

Learning, education, and sharing knowledge with the Larimer County community continues to be an important role for Engineering Department staff.

The stormwater quality education program introduced water quality to citizens at various events. Mascot H_2O Jo remains a big hit with children.

Staff has organized and attended programs that introduces hundreds of elementary students to engineering each year through both Head Start for Science and school workshops.

Two area Lego Robotics teams have been mentored by engineering staff. The teams utilized staff expertise as they developed their competition approach and completed projects. Both teams were recognized during competition for their research projects.

Colorado State University college of engineering has benefited from a number of guest lectures presented by staff.

Engineering interns teaching youngsters about water quality at local farmer's market.
Photo: Scott Cornell

Engineering staff introducing the profession to 4th graders at an outreach event in Windsor.
Photo: Martina Wilkinson

Engineering Department Staff Honored

Marc Lyons

Todd Juergens

Rusty McDaniel

The 2009 County Wide Employee of the Month celebration recognized the outstanding efforts and contributions of Engineering Department staff.

Access and Utility Permits Coordinator **Marc Lyons** was nominated for exceptional customer service. The nomination stated: *"The only reason this situation had a positive outcome is because of the extra effort, care and determination that Marc put into it."*

Todd Juergens is the Senior Construction Manager for the department. An excerpt from the nomination indicated: *"We have a long list of very successful and well built infrastructure projects that have been accomplished under Todd's direction and management."*

Assistant County Engineer **Rusty McDaniel** was nominated for his ability to navigate complex inter departmental and jurisdictional projects. *"Rusty is a monumental performer – quiet yet confident, bright yet exudes common sense with every comment, totally organized, keeps directors and managers realistic and literally moves mountains with every decision."*

A commonality among these selections is that each individual was nominated by employees from other departments highlighting the appreciation and value that the Engineering Department brings to the County. Congratulations!

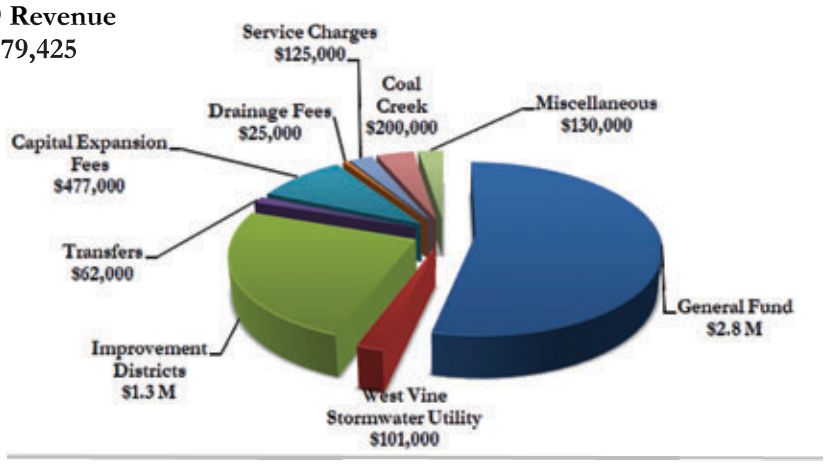
Summary of Finances

Engineering Department funding comes primarily from the County's general fund. For 2009, the budget for Engineering Operations totaled $2.9 million and covered staffing and operating expenses. General funds covered 93% of the costs to operate the department.

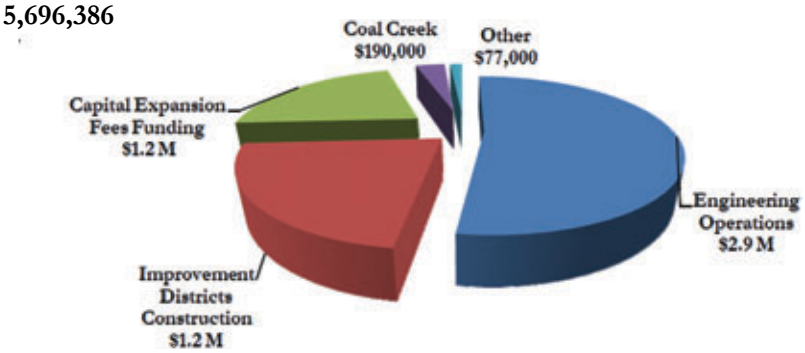
During 2009, the Engineering Department designed and managed the construction of approximately $ 14 million of improvements for roadways and bridges (including $1.2 million of work in the 35 active improvement districts) as well as special projects for the Department of Natural Resources, Solid Waste, and Facilities.

The Engineering Department operations expenses also reflect the costs of the stormwater quality and low-cost safety programs. Regulatory programs such as floodplains and permits are also managed through the department (see a complete list of the 11 major service areas of the department in the box below).

2009 Revenue
$ 5,179,425



2009 Expenses
$ 5,696,386



These figures are unaudited. Audit to be completed mid 2010.

What's Going On Behind the Scenes?

The Larimer County vision statement has been re-prioritized by the current Board of County Commissioners with the following statement as that of the highest priority:

Being A Good Steward Of Public Resources

The Engineering Department continues to focus on that concept both in our publicly visible construction projects as well as in many small ways behind the scenes.

The development review hard copy files have been sorted, consolidated and reorganized. This allows for faster access, and has created additional space for coming years.

In addition to streamlining hard copy files, staff is working towards an electronic filing system. The system is a searchable electronic storage system that will allow both employees and citizens to access information.

The capital design group is changing its design software to Autocadd Civil 3D. This change allows the staff to remain most up to date with efficient design technologies.

Stormwater staff is in the process of creating a GIS-based floodplain mapping tool that will allow citizens easy access to information that currently requires an in-person visit to the County.

Hard copy file system. *Photo: Michelle Jenkins*

Engineering Department Fast Facts

- 30 dedicated individuals!
- 11 major service areas: Engineering Design, Right of Way, Stormwater and Floodplains, Construction Management, Survey, Traffic/Transportation Planning, Permitting, Asset Management, Improvement Districts, Bridges, and Development Review.
- Oversee inspection, improvement and operations for more than 1,000 miles of road, 640 structures, and over 3,000 culverts.
- Regulate 220 miles of mapped floodplain.
- Planned, designed and constructed more than $14 million dollars of improvement projects during 2009.

Contact Information

Larimer County
Engineering Department

Address
200 West Oak Street
Suite 3000
Fort Collins, CO 80521

Mailing Address
PO Box 1190
Fort Collins, CO 80522-1190

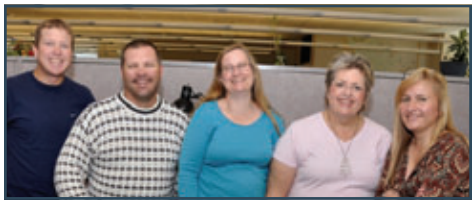
Phone / Fax
(970) 498-5700
(970) 498-7986

Office Hours
8:00 a.m. - 4:30 p.m.
Monday - Friday

On The Web At:
www.larimer.org/engineering

On the job. *Photo: Charlie Johnson*

Paved roads, non-paved roads, and roadside drainage are all parts of the road system we design and build. *Photo: Preston Pierson*



Office and field staff alike keep the department running smoothly. *Photo: Charlie Johnson*

Roadway striping is one of the final touches to a successful improvement project. *Photo: Preston Pierson*

Did You Know?

In 2009, Engineering Department Staff:

Provided technical representation at **75** land use hearings

Researched **31** drainage complaints

Wrote **317** construction, access, event, or transport permits

Completed **1** forensic survey for the Sheriff's Department

Worked on **55** right-of-way, easement and sale acquisitions

Responded to more than **4,500** general citizen inquiries

Public Works Division

Marc Engemoen, Director

Engineering
Fleet
Natural Resources
Road and Bridge
Solid Waste
The Ranch

LARIMER COUNTY
COMMITTED TO EXCELLENCE

This publication is printed on recycled paper.