



FDJ QUARTERLY NEWSLETTER

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CYCLIST...YOU'RE DEAD RIGHT

Why does writing laws to share the roadways between non motorized vehicles and motorized create such a hazard? The conservation of resources has propelled a transition in transportation that has placed emphasis on reduction of the carbon footprint, and more people are finding alternate means of transportation. The design elements are encouraged to include carpooling, hybrid vehicles, motorcycles and bicycles, as outlined in the USGBC LEED certification reviews. Manual on traffic control devices and other AASHTO regulations are mandated by the National Traffic and Safety Board (NTSB) to provide safe travel for motorized vehicles and pedestrians. The bicycles are not a transportation mainstay as in other counties and this transformation will have some pains, serious injuries and deaths. There is an inherent problem with mixing vehicle types which have wide variations of performance during the transition period for constructing safe travel ways to accommodate all types of vehicles on the roadway. It is time that our law makers understand that a minimum standard for engaging truck, automobile and bicycle traffic requires funding to provide travel corridors to accommodate motorized vehicles traveling 55 mph and bicycles traveling 10 mph without the disastrous effects of the collisions. Heavy truck traffic mandates deceleration and acceleration lanes to merge with traffic at the appropriate travel speed. We still get to travel behind trucks that are traveling slower than the automobile because of grade changes and load capacity, so we build passing lanes.

What have we done for the safety of the bicyclist? Our legislation, with good intentions, have given the bicyclist a right to die on the roadway. Like the ole cliché “you’re dead right!” Instead of mixing vehicle traffic for the sake of giving equal rite of passage, when the vehicles are not equal in size, performance, or protection for the drivers. Another step is needed to provide the bicyclist a safe travel corridor in areas where mixing of vehicles get congested and where physical terrain produces a dichotomy between the mass and momentum of the vehicles. I suggest that the benefit – cost ratio equal to 1 or greater to provide these safe passageways will not become realty until the loss of life supports roadscape improvements and separation of vehicle by performance.

We have done nothing for the bicyclist to protect them from motorized vehicles, except pass laws that allow them same rights as a vehicle...excuse me, this is insanity! There are several points that need to be addressed before we install signs that say “Open Cyclist” and start the mêlée. As a suggestion lets evaluate travel ways and cycling patterns to avoid conflicts with motorized vehicles:

- Separation between motorized and non-motorized vehicles on Highways with moderate heavy automobile and truck traffic.
- Separation of vehicle travel for inclines that produce more than 20 mph differences between bicycle and motorized vehicle travel speeds.
- Design and install protective barriers between mixed use vehicles, namely non-motorized and motorized.
- Warnings and signalization of mixed use roadways.

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Dave Jakovac InfraMation Paper Presented in Las Vegas

Dave Jakovac, P.E. presented his paper titled “How Infrared Thermo-graphy Drives Building Energy Conservation Retrofit Techniques” at the 2010 InfraMation Conference in Las Vegas, NV on November 9th. The presentation included posters of two different case studies dealing with the cost and return on investment for various retrofits for buildings in two different categories, structures less than 10 years old & structures more than 40 years old. The full report can be viewed at our website under the “Library” heading.

THE “SMART GRID”

According to the Department of Energy (DOE) the increase for electricity has exceeded transmission growth by almost 25% a year which explains the fact that of the five major blackouts that have occurred in the last 40 years, three have occurred in the last 10 years. Power outages occur frequently leaving, on the average, 1 million hours of lost of electricity per day in the United States. This loss of electricity is estimated to cost the U.S. economy more than \$150 billion per year. Currently the grid that provides the entire country with electricity is said to be vulnerable to inclement weather and possibly terrorist attacks.

To address these concerns the

DOE implemented the Modern Grid Strategy in 2005 to modernize our current infrastructure in the form of a smart grid. The smart grid consists of many different technologies whose focus is to provide a smarter, more efficient and reliable system that will also have the ability for providers to communicate with consumers and vice versa.



One of the components of this is the distribution of the

Smart Meter which was recently installed on many homes in the Treasure Valley through Idaho Power Company (IPC). The Smart Meter allows IPC to accurately and remotely read meters for thousands of consumers as well as identify when service has been interrupted so that they can quickly resolve any problems.

Other components for consumers in the near future will include in-home display devices and smart thermostats that will help the consumer see their energy consumption so that they can make adjustments and ultimately lower their utility bill. Additional devices in the future will include smart dishwashers,

clothes dryers, and washing machines.

Another key element of the smart grid will be the implementation of microgrids. Microgrids are small scale smart grids that provide electricity locally but also have the ability to provide the nations grid with additional electricity. Examples of these microgrids have been in use for some time as backup systems for hospitals and data centers where continuous electricity is critical. It is estimated that by 2015 there will be more than 2,000 microgrids in service worldwide as compared to fewer than 100 in operation in 2010.

FDJ PREPARES FOR “CASH FOR CAULKERS”

As the nation awaits Senate approval for the HOME STAR Energy Retrofit Act of 2010, which would provide incentives for retrofits and reducing energy consumption for all residential consumers, FDJ took an important step to aid in helping local homeowners get their fair share of the \$6 billion in incentives. In August of this year staff member Jess Kuenning obtained certifications for both the Building Analyst Professional and Envelope Professional through the Building Performance Institute (BPI). For FDJ, having two certifications through BPI means that they can qualify to be-

come a Gold Star accredited contractor. Gold Star accreditation allows contractors the ability to apply for awards for whole house energy system upgrades up to \$8,000 in incentives through HOME STAR. Incentives through the Gold Star Retrofit Program are based on the percentage of energy conserved after retrofitting has been conducted.

Having at least one certification through BPI qualifies FDJ to apply for Silver Star accreditation. Silver Star accredited contractors can help customers qualify for up to \$3,000 in incentives for retrofits that include:

- Window and door replacement
- Insulation upgrade
- Energy efficient appliances
- Air sealing for ducts
- Heating & cooling system upgrade

FDJ currently has all the tools needed to perform a

home energy audit including a blower door, carbon monoxide detector, and infrared camera (infrared photo shown below) to provide customers with a thorough and efficient energy audit as well as the ability to help customers apply for the maximum amount in reimbursement through the HOME STAR Act when it passes the Senate.



LIGHTING WITH LEDs

The light-emitting diode (LED) was first introduced in 1962 as a practical electrical component originally used in laboratory test equipment or as indicator lights for their ability to be cycled on and off frequently and their life span. It hasn't been until recently that this lighting technology has progressed and able to be produced economically to be used in everyday items such as TV's, street lights, and headlights. In recent past we have seen a large push to install energy efficient light bulbs in the form of compact fluorescent lights (CFL) into our homes. CFLs have the advantage over incandescent bulbs

because they use less energy, have a longer life span, and fit into any incandescent light socket, but contain mercury which makes disposal a problem. In comparison the incandescent bulb life span is between 750 to 1,000 hours while CFLs have an estimated life span between 6,000 and 15,000 hours. LED lights on the other hand have an estimated life span between 25,000 and 100,000 hours. Some of which were installed in the 1970s and 1980s are still in use today. However the life span of an LED is greatly affected by the environment. Heat can greatly decrease the life span while

cold surroundings will extend the life of an LED. Therefore use of LEDs for exterior lighting can be problematic due to temperature fluctuations, not to mention that LEDs do not give off much radiant heat which is a drawback when using LEDs in cold climates where typically incandescent lights produce enough heat to melt ice build up which happens periodically on signal lights and street lamps. Another advantage LEDs have over the current technology is their ability to be turned on and off many times without failure as well as the time to reach full lighting in less

than a millisecond. As compared to other light bulbs, failure of an LED light is gradual over time visible by a decreased amount of light.

Standards are still in development for LED lights, but is said to be a market that will be around for years to come.



WATER DISTRIBUTION THROUGH BOISE PROJECT

There are many miles of irrigation canals within the Jurisdiction of the Bureau of Reclamation that have passed water to the Treasure Valley for over 100 years. The canal system was constructed over a 20 year period and got its name from investors like the N.Y. Canal. The interruption of funding to maintain the aging concrete liner has presented adjacent land owners to receive free water, just not in a controlled manner. The effects of the deteriorating concrete canal liner and earth section of canal have become more frequent and more severe. Usually water escapes the canal when it is most needed during summer months and repairs and main-

tenance occur between November and April when the canal is decommissioned. With the condition of the canal being suspect, does this present a potential disaster for residences along the canal path? The U.S. Bureau of Reclamation has the task to assess the condition of the thousands of miles of canals in the west and earmark federal funding for repairs, but typically sees the funds taken away and maintenance by necessity prevails per the assistance Regional Director, Mr. Potucek.

The N.Y. Canal is part of the Bureau's Boise Project (BP) and have a multi-member Board of Directors, a clerk, and maintenance staff. When

a leak does get called to question, then BP responds. If there is a leak and the water infiltrates into a residents basement or other structures, the owner soon finds out that their standard insurance coverage excludes subsurface water infiltration. There is an insurance solution for property owners next to the canal in the form of Nationwide Flood Insurance Program (NFIP). Some residents are required by lending institutions to have NFIP if they are in or near a flood plain, but insurance outside the flood plain becomes optional.

Boise Emergency Planning incorporates events such as flooding, seismic activity, land slides, and fire, but not

loss of a canal running through Boise. If repairs and maintenance are not properly funded, then the proper care of an aging waterway system cannot be done by visual inspection. The use of infrared (IR) can identify the areas of the canal that have increasing risk, such as voids, concrete joint failure and rodents, and avert potential disastrous events. The use of IR Thermography is one of the most cost effective tools to perform the canal structure assessment and FDJ has the FLIR P660 and technical knowledge to perform this analysis to protect the public from a BP disaster.



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Providing Engineering
Expertise to assist each client
with unbiased problem
identification and resolution.

COMPANY PROFILE

FDJ has over 20 years of experience in the field of Forensic Engineering. Specifically in the areas of accident reconstruction, fire C&O, structural inspection & evaluation, mold and water intrusion issues, personal injury, and property loss. In addition we have energy audit and building science experts with FLIR infrared cameras and retrotec blower doors ready to perform ASTM E779 air barrier testing and “whole building” energy evaluations.

Our staff has over 30 years of experience in engineering and construction. With 20 years of expert testimony for both claimants and defendants as unbiased engineering professionals.

Our expertise in the field of accident reconstruction is combined with computer aided design (CAD) capabilities with EDC-HVE with EDSMAC4 accident reconstruction simulation software. This combination allows us to accurately calculate and clearly present the relationships between site parameters, speeds, physical evidence, braking, liner momentum, and energy balances in a timely manner. Our vehicle database from 4N6 Expert includes over 50,000 units and 170 manufacturers.

Utilizing the right tools to promptly document your loss, whether it be an automobile accident, personal injury, or property loss, is essential. FDJ has many years of experience in gathering data and preserving evidence. For assistance with your Forensic Engineering needs call us at 208-368-0045.

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