

Been there. Done that

Expanding a traffic network to keep up with the times.
Michael Irvin reports from Castle Rock, Colorado



Many of us can relate to that statement – “been there, done that”, but what happens when you are no longer, “there”? For Brian Tennent, Traffic Operations Engineer for the Town of Castle Rock, CO, the *déjà vu* moment provided him with a vision of what he wanted Castle Rock’s traffic network to look like.

“I’ve worked in three different communi-

ties now: the City of Winston Salem, Town of Chapel Hill, and now the Town of Castle Rock,” Tennent states. “Pretty much all of those had a separate TOC (Traffic Operations Center) with video walls for their CCTVs (Closed-Circuit TVs), as well as adaptive traffic management system software – they were all using Centrac. For us, that is in the works. Right now our TOC will be

in my office. We’ll probably look at getting a big flat-screen TV and using it to scroll through the various cameras. To put it in perspective, I’m referencing towns like Winston Salem that has closer to 400 signals; Chapel Hill has 130. Here in Castle Rock, we have 31 signals maintained by the Town. It’s all a difference of scale.”

Located within easy commuting distance

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▲ **Figure 1: The iconic Castle Rock is a distinct landmark for which the Town is named**

Douglas County saw job growth jump by 5.9 per cent making it one of the fastest growing markets in the US, second only to

Fort Bend County in Texas. Combine these statistics with the fact that the Town of Castle Rock was one of five small Colorado cities ranked among *Money’s Best Places to Live*, and you get an idea of why Castle Rock’s population change since 2000 exceeds 175 per

cent. It’s that dramatic growth that Tennent and his team are working to address.

“We’re a growing community,” explains Tennent. “We’re rapidly adding signals, however, we look at alternative measures like roundabouts before just putting in a signal. Signals can cause delays when the demand’s not there. Our goal is to reduce driver delays and best serve our community’s transportation needs.”

This emphasis on delivering the best commuter experience requires an effective use of both human and technological assets. A thorough assessment of the City’s existing infrastructure and an in-depth evaluation of available traffic management solutions conducted by a local engineer-

ing firm brought a new level of clarity and direction to the Transportation Planning and Traffic Engineering Department.

“Having a robust central traffic management system for keeping clocks updated and correct, making sure our offsets and splits are always on-point is crucial because if the slightest thing is off, it can cause a back-up”

“The traffic network that we have today is very much corridor- and arterial-based,” Tennent says. “There’s not a lot of isolated signals. That’s why having a robust central traffic management system for keeping clocks updated and correct, making sure

our offsets and splits are always on-point is crucial because if the slightest thing is off, it can cause a back-up.”

MEETING DEMAND

With the varied terrain and inconsistent boundaries that comprise the Town of Castle Rock (see Figure 2), Tennent and team were faced with a number of seemingly insurmountable challenges as they looked to extend their fiber network in response to their expanding traffic network.

While most traffic administrators would admit that they would prefer to run fiber to all of their intersections, they soon discover that plan is simply unfeasible for a number of reasons, cost being at the top of the list.

of Denver, Castle Rock is the county seat of Douglas County. It is also the number one place in Colorado to find a job, according to a recently released report by the consumer advocacy website, *NerdWallet*, which ranked the best Colorado towns for job seekers, and Castle Rock topped the list (see Figure 1).

According to the US Department of Labor,

“The cost factor of fiber was very high in some areas,” Tennent explains. “We found in researching alternative solutions that wireless broadband radios would meet our needs, as far as giving us the communications we needed, while meeting the price requirements associated with the project.”

To address this challenge, Tennent turned to Intuicom, Inc., a leading provider of wireless communications solutions for the traffic and intelligent transportation systems market. Their extensive experience designing and deploying advanced wireless networks for traffic signals and ITS devices, coupled with the fact that they are Econolite’s Wireless Communications Partner, gave Tennent the confidence that they were the right choice for his project.

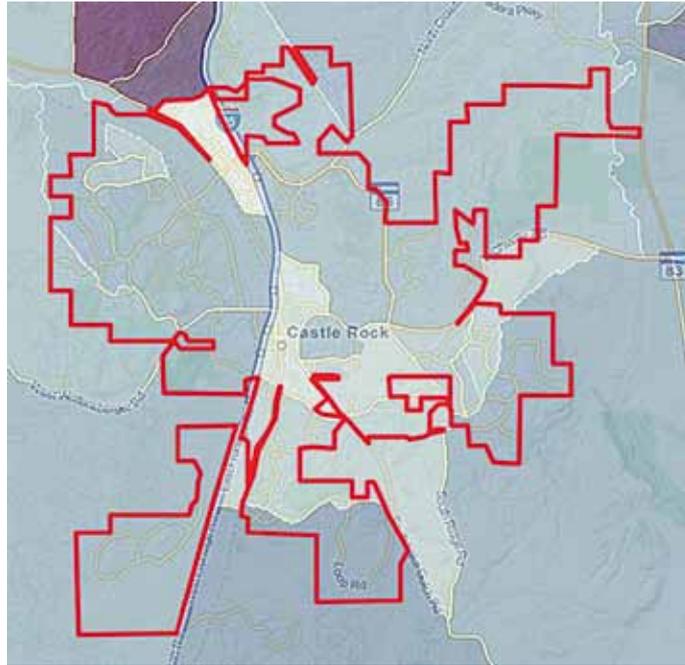
Designed for high bandwidth, long range applications, wireless transceivers are allowing the Town of Castle Rock to economically expand their existing fiber network by interconnecting intersections throughout the network by leveraging wireless technology.

“The broadband radios are helping us expand our network in areas of geographic incompatibilities for fiber installation,” Tennent states. “These radios play a key role in helping our system provide the latest information that’s available to help equip our citizens with up-to-date route information resulting in improved fuel consumption and better ways of traveling—both which help us meet our town’s objective of delivering the best commuter experience.”

TEAM ETHICS

Collaboration and cooperation have proven to be common denominators with all of the successful relationships that Tennent has established during his tenure in Castle Rock.

“My most successful vendor relationships can best be described as partnerships,” Tennent states. “This is no exception. Everybody from sales to engineering has been great to work with. They’re very accommo-



◀ **Figure 2: Town of Castle Rock boundaries**

dating, and very knowledgeable of their product. The best aspect is, like in any successful business structure, they’re willing to work with their clients. It’s not, ‘Here’s our product. Here’s how it’s going to be.’

“Now administrators are able to receive text message alerts, video feeds, and get emails that actually notify them how their traffic network is performing”

When you have an organization that’s willing to work with you, from the sales side to the engineering side, that’s what builds a partnership that will last for years to come.”

The deployment is underway and is being done in a multi-phased approach. Phase one focuses on upgrading controllers, switches, communications, and setting up our centrally managed adaptive software system. Phase two will continue the expansion with the addition of CCTV cameras intended both for surveillance and real-time monitoring of all the Department assets and intersections – a strategy that has proven effective with agencies looking to increase their responsiveness and reduce unnecessary expenses.

Moving forward, Tennent expects that the Town’s Transportation Department will be asked to validate the investments made in

terms beyond simply customer satisfaction.

“We look at various MOE (Measure Of Effectiveness) reports, including the Purdue Coordination Diagram,” says Tennent. “We anticipate using the various levels of reporting that we can obtain from the adaptive traffic signal control software that we purchased to better analyze our data. When we can better analyze it, we can make timely adjustments to better serve the needs of our citizens.”

“Times change,” Tennent remarks. “Now administrators are able to receive text message alerts, video feeds, and get emails that actually notify them how their traffic network is performing. It’s where the industry is going. We’re just trying to keep up with the times.”

Michael Irvin is Intuicom’s Director of Marketing. Mr. Irvin is the author of numerous articles showcasing the accomplishments of individuals and organizations that have leveraged technology to overcome the challenges that they, and their customers, face. These articles have been published in educational journals, industry publications (including *Thinking Highways*), newspapers and online forums around the world

