



Celina Leading Texas as the Gigabit Community of the Future

September 2015



“Making sure the U.S. has super-fast, high-capacity, ubiquitous broadband networks delivering speeds measured in gigabits, not megabits isn’t just a matter of consumer convenience, as important as that is. It’s essential to economic growth, job creation and U.S. competitiveness.”

- Julius Genachowski, Chairman of the Federal Communications Commission

What Is a Gigabit Community?



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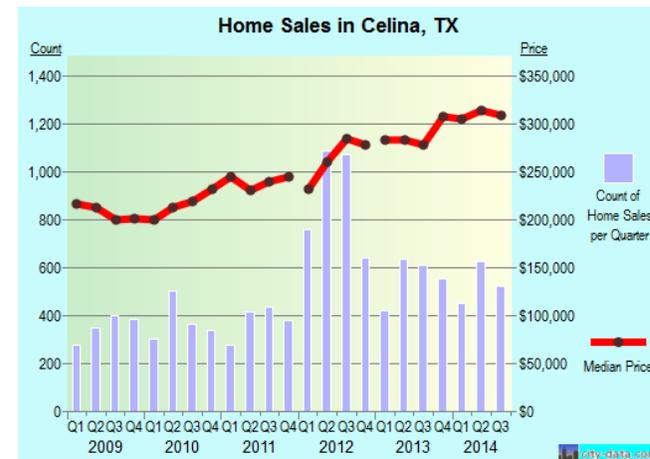
Celina can set the standard for the future of Texas as the first 100% Gigabit Community.

What is meant by a Gigabit Community?

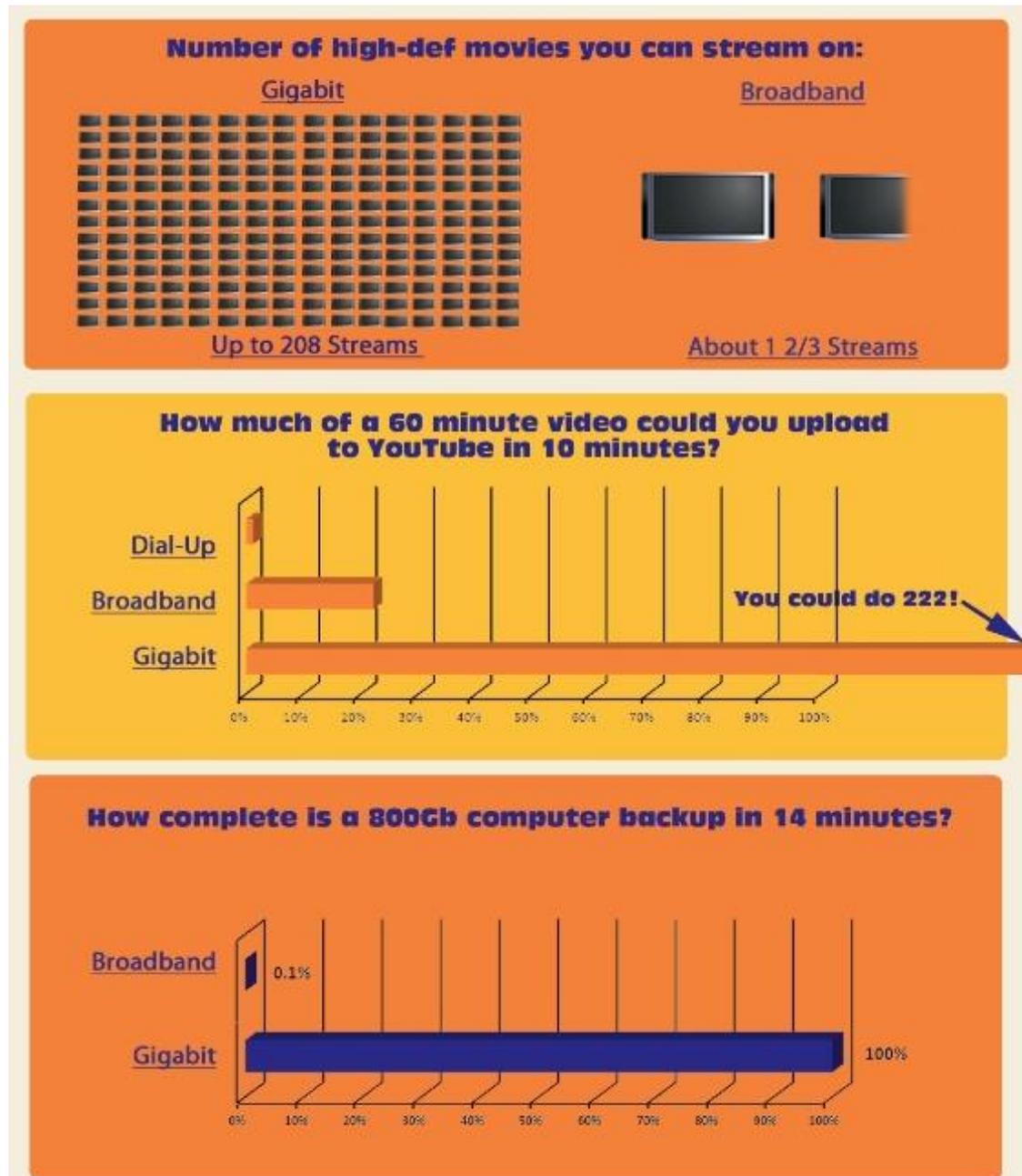
- The Federal Communications Commission has defined gigabit communities as those that offer one gigabit-per-second service, or about 100 times faster than the average fixed high-speed Internet connection.
- 100% coverage. Every rooftop, household and business, connected. Every entity within the Celina footprint, including businesses, schools, medical facilities, engineering labs, libraries, commercial enterprises, and residents, will have access.
- End to end connectivity. Connectivity from backbone to last mile to last 100 feet which enables symmetrical performance; users can send information at the same speed at which they receive it.
- Affordable to residents, business and municipality.

Why Celina is ideal for a Gigabit Community?

- Celina build out is large, fast growing. But, we are at the start of the build out. More difficult for existing communities to retrofit.
- Economy of scale. Celina at final build out is projected at 325,000 residents. Size makes this attractive to Gigabit partners.
- Transportation, water and land availability.



How Fast is a Gigabit Per Second?



Gigabit City Benefits to Residents



Gigabit City Benefits to Residents

Ensure residents access to current and future world-class services

- Real time Internet connectivity; download videos, photographs, TV shows, games and other data that chew through bandwidth.
- Three immediate impacts Gigabit broadband
 - Video Streaming. Today, we're lucky to watch one high-definition Netflix movie without buffering. With a gigabit, everyone in the house could watch a different movie with plenty of bandwidth left over.
 - Sharing Photos and Video. Uploading more than a very brief video to YouTube today takes hours. With a gigabit connection, you could upload an hour of high definition video in less than 5 seconds.
 - Backups. If you backup your computer to a cloud backup service, today you have to leave your computer on all night to get your backup done. That uses a lot of power and puts a lot of wear and tear on your PC. With a gigabit of connectivity, you can back up a 800Gb hard drive in less than 14 minutes.
- Residential services of the future are endless...
 - Real time, in home education
 - Real time, in home medical diagnostics
 - Internet of Everything connectivity – HVAC, security, weather, replenishment
 - In home 3-D printing of advanced components
 - Work at home capability for high tech workers
- Attracting non-service businesses will lower property tax burden.
- Gigabit connections for residents will increase property values.



Gigabit City Benefits to the Economic Base



Gigabit City Benefits to the Economic Base

Gigabit connectivity will drive the right businesses into Celina's economic base.

Gigabit community will attract a dynamic business base

- The U.S. needs a critical mass of gigabit communities nationwide so that innovators can develop next-generation applications and services that will drive economic growth and global competitiveness.
- Companies that want to move large data-rich files quickly, such as medical reports or engineering studies, will be ideal users.
- Gigabit networks can enable genetic sequencing to treat cancer patients, immersive and creative software to support lifelong learning from home, and ways for small businesses to take advantage of Big Data.
- Target data center service provider as key employer for area.
- Solidify a higher education facility in Celina (Collin College, SMU) which then will attract innovation hubs, start-ups and research related firms.

Case studies of success

- Chattanooga, Tennessee built out a gigabit fiber network that has helped attract businesses like Amazon and Volkswagen, creating more than 3,700 local jobs.
- In Kansas City, the Google Fiber initiative is bringing gigabit service to residential consumers, and startup tech companies have begun flocking to the area, spawning KC's new nickname — the "Silicon Prairie." Similar stories in communities as diverse as Cleveland and Lafayette, Louisiana.
- Gig.U initiative has already catalyzed over \$200 million in private investment to build ultra-high-speed hubs in the communities of many leading research universities.

Gigabit City Benefits to the Municipal Government and Services



Gigabit City Benefits to the Municipal Government and Services

Allow municipal government, Celina ISD and utilities to provide Texas leading citizen services.

- Smart Governance(e-governance)
- Smart Fire and Disaster
- Smart Police and Security
- Smart Transportation
- Smart Energy / Smart Grid
- Smart Water Management
- Smart Waste Management(Recycling of waste, residual management, Recovery of waste organics & Energy)
- Smart Education(e-Education)
- Smart Medical Facility(e-Medical)
- Smart Integrated City-Wide Service Communications
- Environmental Awareness (i.e. changing weather conditions; human defined changes)
- Smart Building & Home
- POTENTIAL RECURRING REVENUE STREAM



Next Steps



Sample Next Steps

Analysis that Will Lead to Informed Recommendation

- **Creation of a Gap Analysis to create Conceptual Design.**
- **Introduction**
 - Why is a City-wide Broadband Network needed for Celina
 - Strategic Framework
 - What are the goals for the Celina Gigabit Community
- **Surrounding Area Middle-Mile Infrastructure**
 - Middle Mile Goals and Strategies
 - Location of existing middle mile network
 - Middle mile network technology and connectivity
 - Middle mile network providers
 - Key Characteristics of Middle Mile Network
- **System Infrastructure Plan**
 - Current State of Broadband Services in the City
 - Backbone System Design
 - Last Mile System Design
 - Last 100 Feet System Design
 - Implementation of Design
 - Management of the Backbone, Last Mile and Last 100 Feet Network
 - Capital Investment Required to Implement Backbone, Last Mile and Last 100 Feet Network
- **Business Model Recommendation**
 - Public, Public-Private, Private

Sample Next Steps, Cont'd

- **Building the Gigabit Community**
 - Articulating the Initial Direction
 - Inventorying Big Vision Statements in the Community
 - Building Peer Network
 - Checking Readiness for Seeking Large-Scale Input
 - Identifying and engaging key anchor customers
- **Creating a Shared Playbook Vision**
 - Surveying Community Members for Input
 - Soliciting Community Expectations and Objectives
 - Understanding Critical Success Factors
 - Seeking Input on Focus Areas
 - Making the Shared Playbook a reality – Customer demand / revenue exceeds Capital Investment to Design, Build and Maintain

Thank you