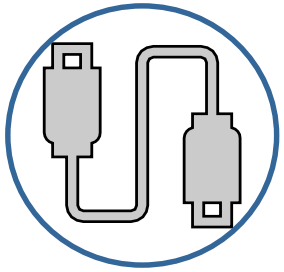
Information Technology Services

July 2019

Agenda

- Information Technology Services
  - Current initiatives
  - Broadband / Fiber
- 5G
  - Background
  - Benefits

ITS Core Services



Infrastructure

Networks (Wired and Wireless)

Communications & Collaboration Tools

Data Storage

Data

Enterprise Business Applications

Spatial Analysis (GIS)

Website

Services

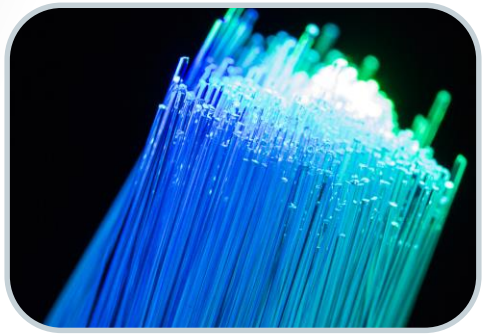
Fiscal/Vendor Management

Technical Support (Service Desk)

Project Management

Information Security (Cybersecurity)

Initiatives



Municipal Fiber – Design Underway

Customer Relationship Management/311

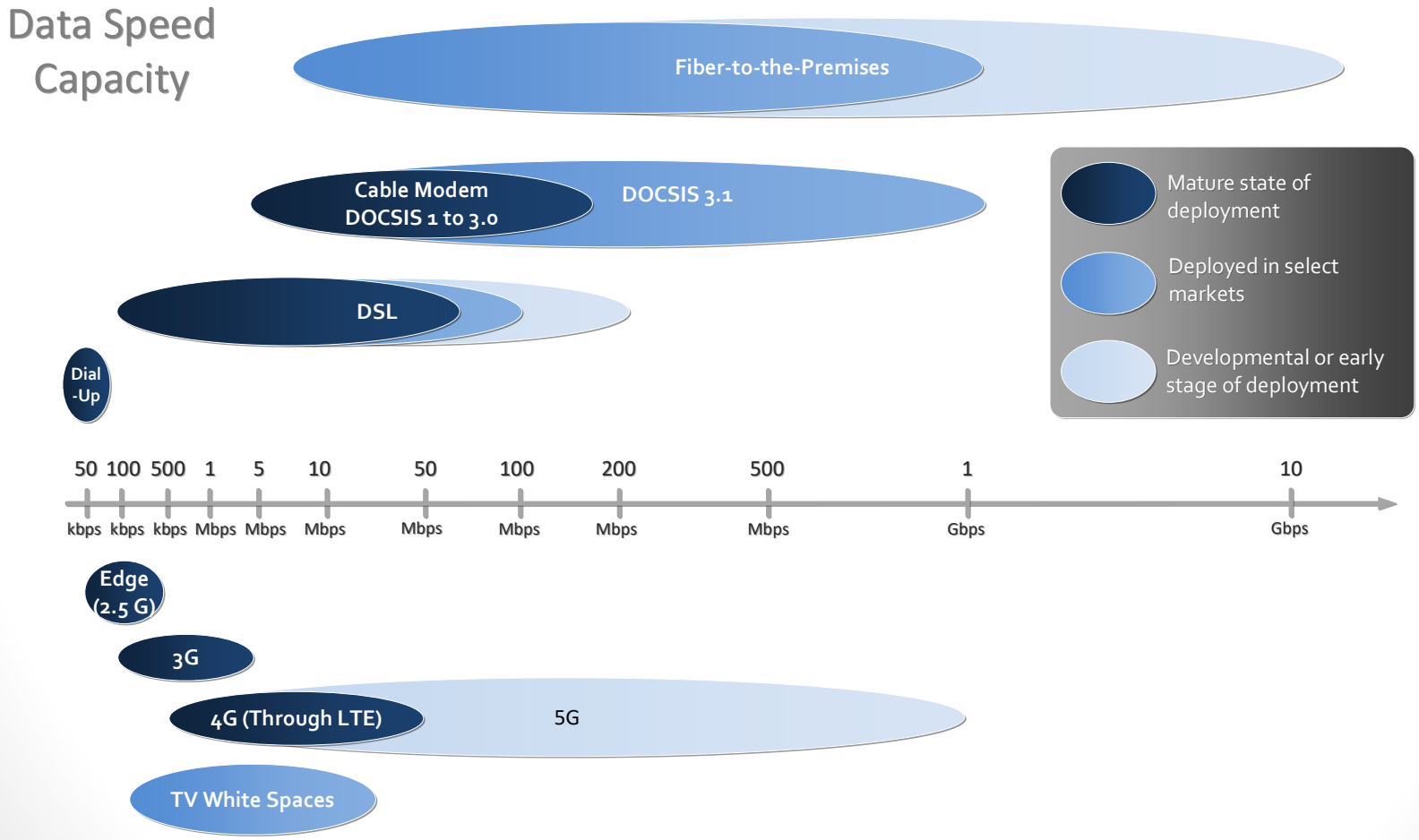
APEX – Permitting System Replacement

NextGen 911 (regional)

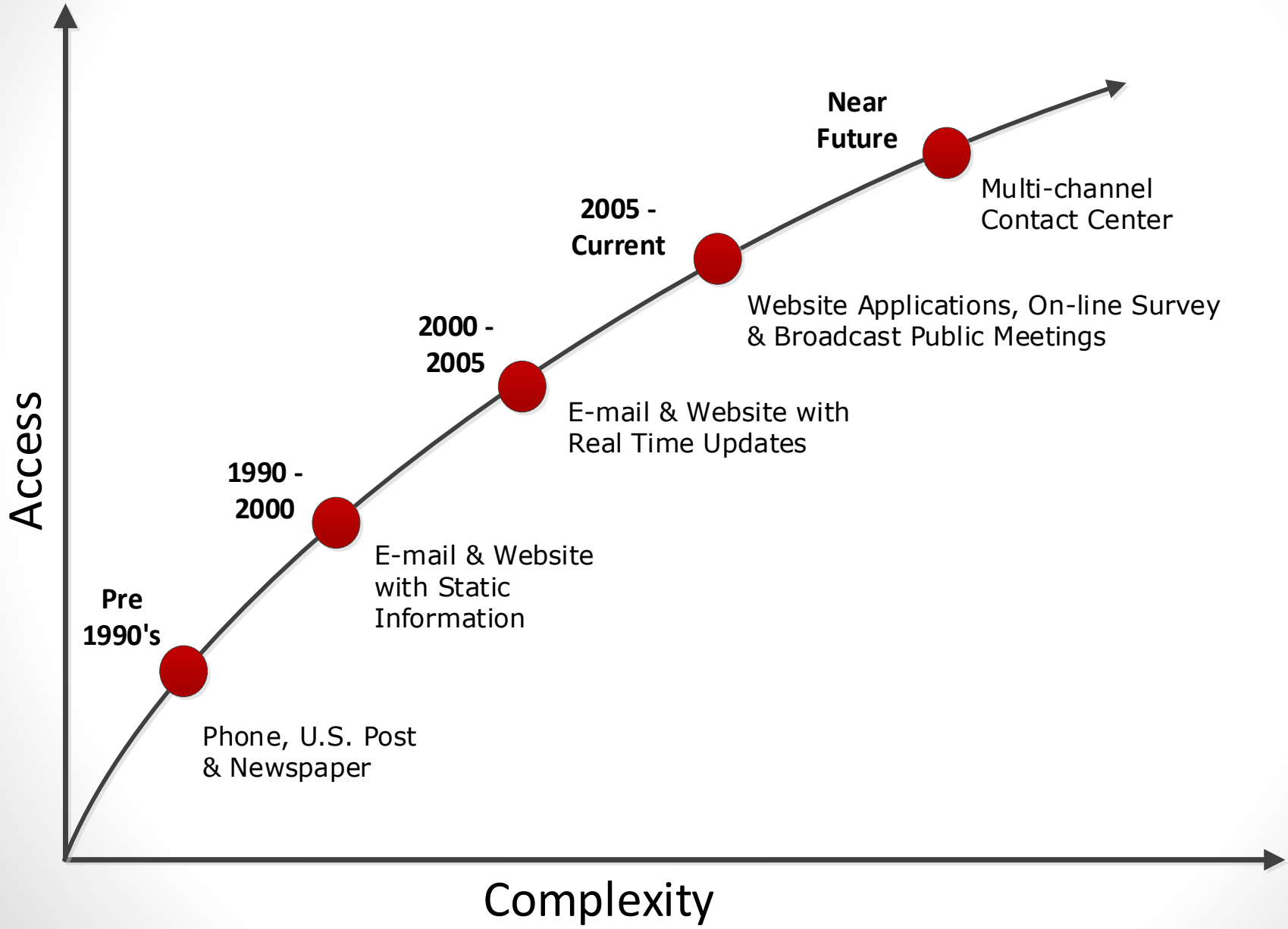
Information Security (Cybersecurity)

Courts Judicial Replacement System

Evolution Of Broadband



Evolving Through Technology



Wireless Technology Evolution

1G	"first generation" wireless was an analog cellular system that launched commercially on October 13, 1983. Voice calls
2G	introduced digital technologies that used spectrum more efficiently so that it could serve more people and deliver more applications, such as text messages, helping us all communicate. Text Messages
3G	improved communications by supporting even more diverse applications, including mobile internet access, mobile gaming, video calls, and streaming audio and video.
4G	delivered even faster speeds, improving experiences for customers when using data-intensive applications, increasing data upload and download speeds, and supporting HD applications.
5G	will support more diverse applications and more connections; providing more capacity, lower latency, and increased speed. 5G will handle the exponential growth in demand for capacity, connectivity, and capability – delivering a better, faster experience for all. –IoT, Smart Cities, Sensors, Edge Computing, Fixed wireless

Source: https://www.ctia.org/the-wireless-industry/the-race-to-5g

Background

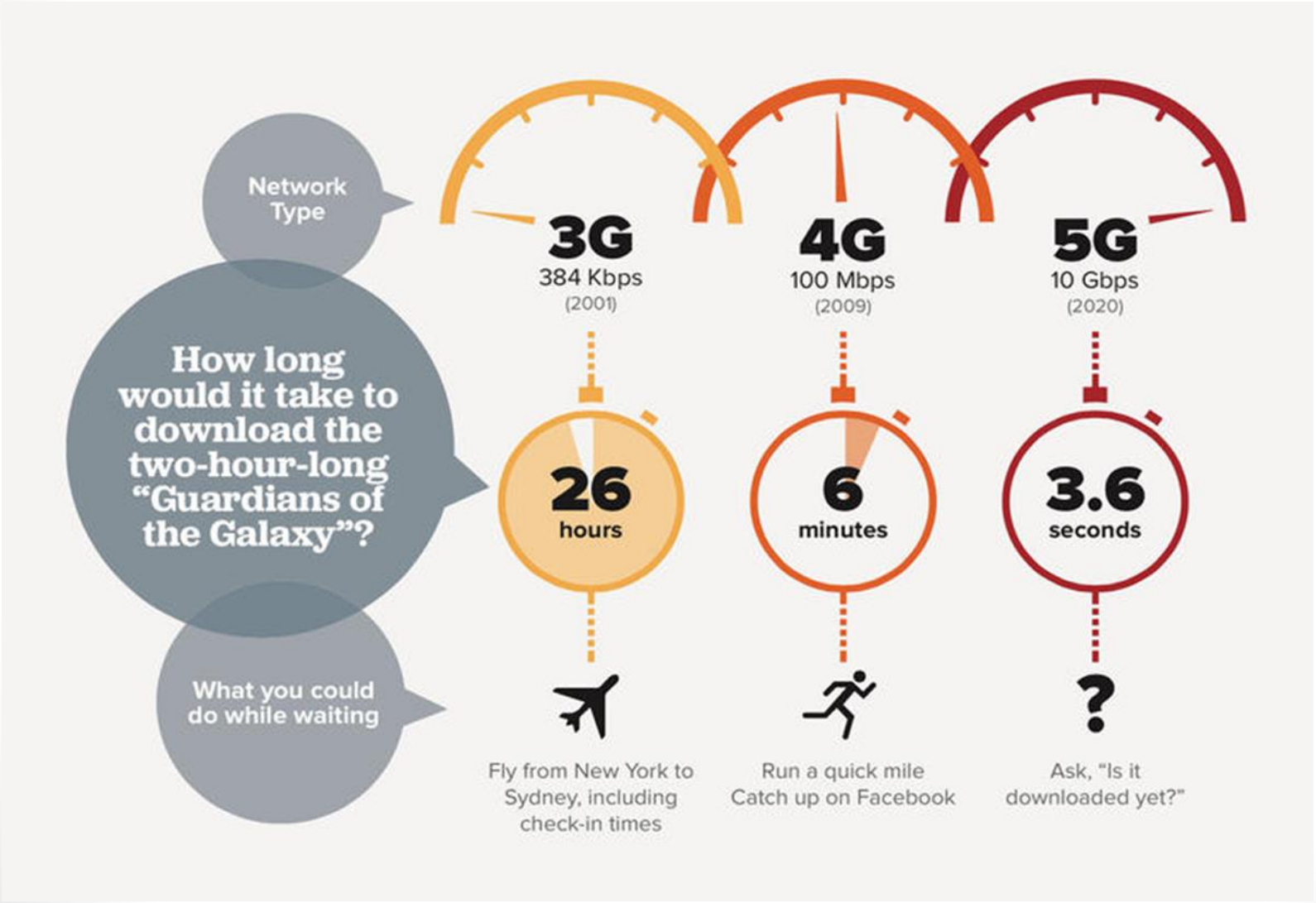
- September 27, 2018 – FCC released order on small wireless telecommunications facilities (Small Cells) – impacts to Alexandria's right-of-way management and permitting process
  - April 15, 2019 deadline for aesthetic standards
  - Small cell allow data transmission via millimeter waves which is closer to the edge versus the macro cells (cell towers)
  - Transmit/receive undisrupted coverage
  - Shot clocks for approval of applications

Benefits

- 5G infrastructure will be owned and operated by service providers – wireless carriers and other companies
- America's wireless companies are beginning to invest an estimated **$275 billion** into building 5G networks. This will create **three million new jobs** and add **$500 billion** to the economy.[2] In fact, it's estimated that one out of every 100 Americans will benefit from a new 5G job. (Source: CTIA.org)
- Fixed wireless
- More redundancy and reliability / less power consumption
- GPS location information with more specificity
- Vehicle-to-vehicle communications for driverless cars
- Accommodates lots of devices on networks over short distances

(Source: American City & County –June 2019)

Benefit


Network Type
How long would it take to download the two-hour-long "Guardians of the Galaxy"?
What you could do while waiting
3G
384 Kbps
(2001)
4G
100 Mbps
(2009)
5G
10 Gbps
(2020)
26
hours
6
minutes
3.6
seconds
?
Fly from New York to Sydney, including check-in times
Run a quick mile
Catch up on Facebook
Ask, "Is it downloaded yet?"