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REAL SOLUTIONS

A Glimpse Into The Future: The Use of Small Cell Wireless Facilities

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Small cell wireless facilities are small, short-range antennas designed to provide comprehensive cell coverage, that are often co-located on other structures within the ROW.

- Michigan: Antenna less than 6 cubic feet and associated equipment less than 25 cubic feet
- Federal Law: Antenna less than 3 cubic feet and associated equipment less than 28 cubic feet

What are Small Cell Wireless Facilities?

Legal Background

- Small Cells and their associated support structures are subject to a complex and staggering array of regulations and protections, both on the state and federal level.
- Municipalities in Michigan will need to comply with the Small Wireless Communications Facilities Deployment Act of 2018, various federal statutes, and orders/declaratory rulings from the FCC
- This legal framework limits the extent to which municipalities can regulate Small Cells and imposes affirmative requirements on municipalities to timely act on applications to place Small Cells in the ROW—also known as “shot clocks.”



“Shot Clocks”

- Under both state and federal law, a “shot clock” will begin running once an application for a Small Cell Wireless Facility or a support structure is submitted. In some cases, an application will be deemed approved if it is not timely acted upon, so it is **crucial** to promptly process a Small Cell application after it is received.
- Small Cell shot clocks range anywhere from 60 to 150 days, depending on several factors such as the law under which the application is submitted, the type of facility being requested, the number of applications submitted at a time, and whether a new support structure will be built or the Small Cell will be collocated, to name a few.



WARNING

- If your township receives an application for a Small Cell or related support structure, you should contact your township attorney ***ASAP***.
- **Shot clocks begin to run as soon as a municipality receives an application.**



What Can Municipalities Do to Regulate Small Cells?

Under this complex legal framework, municipalities have relatively little control over small cells and support structures. However, a municipality can generally:

- Charge reasonable application fees and annual rental rates
- Deny applications that do not conform with state or federal law
- Reject installments that would interfere with traffic, sight lines, or other infrastructure
- Adopt regulatory and zoning ordinances addressing small cell wireless facilities and related structures



Regulating Small Cells – Zoning

- Zoning regulations are inapplicable to Small Cells that are within the ROW, whether co-located on an existing utility pole or requiring the construction of a new support structure, so long as minimal dimensional requirements are satisfied.
- Zoning can be used to regulate Small Cells and associated support structures ***outside*** the ROW, using traditional zoning controls like special land use permits.



Regulating Small Cells – Regulatory Ordinance

Through the adoption of a regulatory (or “police power”) ordinance, a municipality can regulate the following aspects of Small Cells:

- Require permits for installations both within and outside of the ROW and limit the number of permits that can be included in a single application
- Review proposed installations subject to certain standards of review (compliance with law, safety, use of infrastructure, etc.)
- Require a license agreements for installations on municipally-owned utility poles and reserve space on the same
- Prohibit collocations on buildings in historic districts
- Require a performance bond and proof of insurance for deployments in the ROW
- Impose design criteria and/or stealth and concealment requirements to limit visual impact of Small Cells, including controls on lighting, coloring, screening, signage, landscaping, and other aspects.



A municipality can, by ordinance, impose uniform aesthetic standards on certain small cell facilities and support structures.

- Unlike massive conventional cell towers, small cell facilities can be concealed with relatively little effort.
- Small cells can be streamlined into streetlights and utility poles, can be integrated into architectural features, and can even be cleverly camouflaged as trashcans!
- Simpler aesthetic controls like restrictions on height, color, design, and skirting/screening may be easier to apply.

Stealth and Concealment

Drawbacks of Small Cells



Short Range



A lot of facilities are needed to provide comprehensive coverage



Unable to use existing cell infrastructure—large cell towers may become obsolete and a burden aesthetically



Why Small Cells?

Although Small Cells can be a burden, they can also offer considerable benefits to municipalities:

- Provide 5G Coverage
 - 4G servers don't have as much capacity to handle current bandwidth
 - Increasingly “smart” world—phones, cars, appliances, doorbells, fixtures, security systems...the list goes on!
- Increase network speed (reduce delay/lag/latency)
- Increase network capacity (able to serve more users at once)
- 5G is the future!



Polling Question

How would you describe the cell coverage in your community?

- We have 5G coverage
- We have good 4G coverage
- We have spotty 4G coverage
- We have mostly 3G coverage
- There is very little cell coverage to speak of



General Benefits of Small Cells

- Improve wireless experiences in places where large cell towers are not the best solution
- Complete coverage (no “dead zones”)
- Equipment is small and relatively easier to install in desired areas (like existing utility poles)
- Reduced aesthetic impact compared to traditional cell towers
- More suited to popular entertainment normally reserved for WiFi (streaming movies/TV, video games)

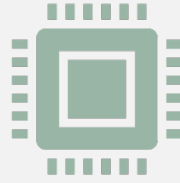


Benefits of Small Cells: Increased Capacity

- Many areas in the US experience 4G congestion, meaning that download times vary depending on how many users are accessing the 4G network.
- A 2019 study by Opensignal indicated that in the US 4G download times are often up to two times slower during peak hours (during the day) compared to nighttime speeds where fewer users are on the network. 5G coverage through small cell can significantly mitigate this problem.
- This is significant not just in densely populated urban areas, but also in locations that experience significant population shifts.
 - Seasonal population booms (tourist towns)
 - Temporary events that crash cell capacity (festivals, fairs, concerts)
- Small cells providing 5G coverage can encourage tourism by ensuring adequate network capacity.



Benefits of Small Cells: Tourism



The greater bandwidth afforded by 5G through small cell wireless facilities can enable new technologies being applied in the tourism sector, such as virtual or augmented reality technologies that will help tourists experience new locations.



The increased coverage and reduced latency offered by small cell wireless facilities can aid navigational apps in more accurately and safely guiding tourists in an unfamiliar area.



Stable and fast internet connections at hotels, motels and other destinations can increase guest satisfaction and entice business travelers to book stays. 5G coverage can also enable greater use of smart features (like lighting and temperature control) that are desirable to many guests.



Benefits of Small Cells: Remote Work

- The proliferation of small cell wireless facilities could be extremely useful given the dynamic shift in employees conducting work remotely. Studies have shown that the number of remote workers has tripled since pre-COVID 19, and this trend is likely not going to change anytime soon.
- The recent explosion in remote work also means that companies are increasingly looking for employees in different geographic areas. In other words, employees no longer need to live where they work. In some communities, small towns have been experiencing significant spikes in growth due to influx of metropolitan remote workers.



Benefits of Small Cells: Remote Work

Small cell wireless facilities can provide faster wireless internet speeds, which is better for video communication services often utilized by remote workers (such as via Zoom) and can thus be instrumental in attracting remote workers and their tax dollars.

The reduced cost of installing small cell wireless facilities instead of a conventional cell tower may also make it easier for municipalities to offer excellent internet access in public places such as parks, further expanding the areas where remote work can take place.



Benefits of Small Cells:Virtual Meetings

- Consistent 5G coverage through small cell wireless facilities could also make it easier for municipalities to conduct virtual or hybrid meetings through video streaming programs. Reduced latency lends itself to more natural conversations over video chat (less delays), and faster network speeds will increase video and audio quality.
- Both the municipality hosting the meeting and the members of the public joining the meeting virtually would be aided by faster internet speeds and greater coverage.
 - Recent AG Opinion indicates hybrid meetings are acceptable for ADA compliance.
 - Hybrid or virtual meetings may become more acceptable in the future.



Benefits of Small Cells: Autonomous/Connected Cars



Small cell towers will increase the value and capability of the use of autonomous vehicles—this could apply both to general transportation, emergency response vehicles, and agricultural vehicles, as that technology becomes available



Case Study: The City of Detroit intends to designate a Transportation Innovation Zone in Corktown.

Makes it easier to safely pilot and deploy new mobility and transportation solutions

Small cell wireless facilities will dramatically increase the chances of success in this Transportation Innovation Zone



This could pave the way to using these types of vehicles in other municipalities, and small cell towers will be at the forefront of its capability



Benefits of Small Cells: Public Transportation and Pedestrian Safety

- Public transit is another area likely to see 5G-enabled automation in the near future. MSU plans to deploy its first automated bus this year.
- U of M is also developing 5G-based traffic controls, using 5G-connected cameras installed at intersections to help identify traffic and pedestrian patterns to prevent collisions.



Who Knows What the Future Holds?

- Small cell wireless facilities and nationwide 5G coverage are certainly the way of the future.
- Cutting edge technologies like automated cars, smart homes, and augmented reality will heavily depend on 5G coverage as they become more commonplace.
- As these technologies continue to mature and evolve and new developments emerge, a robust small cell network will help municipalities adapt with the times.



Who Knows What the Future Holds?

- 5G is predicted to increase connectivity between fire stations, responders, and hospitals, providing valuable, real-time data such as the exact location and biometric data of firefighters and citizens in need of assistance in emergency situations.
- Advances in 5G are also anticipated to allow increased coordination between fire trucks and nonemergency traffic, and the automation of various fire station operations.

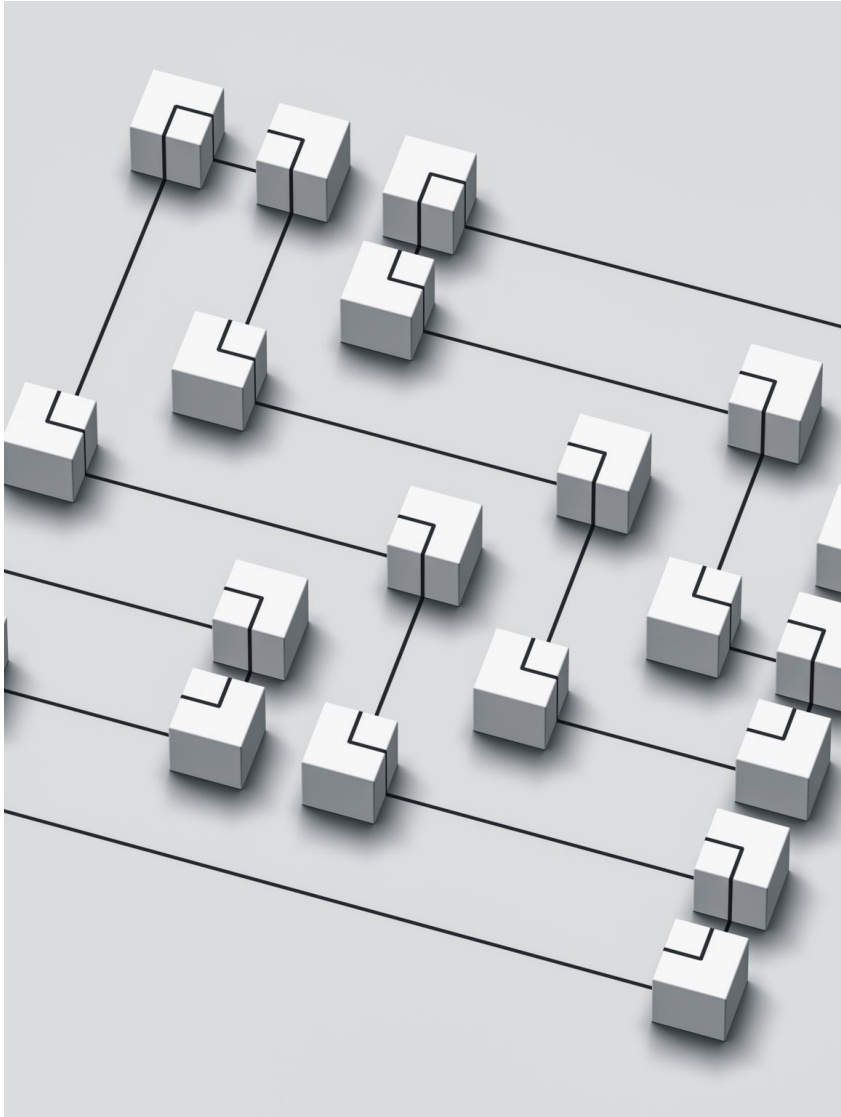




Who Knows What the Future Holds?

In the law enforcement context, 5G connectivity promises to:

- Expedite network access to speed up tasks like ticketing and crime scene investigations;
- Allow hands-free network input through speech recognition for suspect or navigation data while driving;
- Enable livestreamed body cameras;
- Improve drones use in investigation and search and rescue operations;
- Facilitate the use of new technologies like license plate readers; and
- Coordinate traffic for better response times and safer pursuits.



Ways to Encourage Small Cell Development

- Streamlined and simplified regulation (consider reduced rents or application fees).
- Address Small Cell land use goals in master planning (similar to what some municipalities are currently doing for electronic vehicle charging stations).
- Encourage the incorporation of Small Cell support structures in new buildings and site plans.
- Circulate RFPs to build Small Cell support structures in public places to attract applicants.
- Make municipal buildings available for Small Cell installations for a minimal fee.





Questions?

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