



DEVELOPMENT SERVICES DEPARTMENT
 ENVIRONMENTAL COORDINATOR
 450 110th Avenue NE; P.O. BOX 90012
 BELLEVUE, WA 98009-9012

DETERMINATION OF NON-SIGNIFICANCE

PROPONENT: T-Mobile

LOCATION OF PROPOSAL: 15 140th Avenue NE

DESCRIPTION OF PROPOSAL: Replace a parking area light standard with a 120-foot monopole and locate the related equipment shed in the NW corner of the site.

FILE NUMBER: 08-143285-LB

The Environmental Coordinator of the City of Bellevue has determined that this proposal does not have a probable significant adverse impact upon the environment. An Environmental Impact Statement (EIS) is not required under RCW 43.21C.030(2)(C). This decision was made after the Bellevue Environmental Coordinator reviewed the completed environmental checklist and information filed with the Land Use Division of the Development Services Department. This information is available to the public on request.

- There is no comment period for this DNS. There is a 14-day appeal period. Only persons who submitted written comments before the DNS was issued may appeal the decision. A written appeal must be filed in the City Clerk's office by 5:00 p.m. on _____.
- This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS. There is a 14-day appeal period. Only persons who submitted written comments before the DNS was issued may appeal the decision. A written appeal must be filed in the City Clerk's Office by 5 p.m. on July 9, 2009.
- This DNS is issued under WAC 197-11-340(2) and is subject to a 14-day comment period from the date below. Comments must be submitted by 5 p.m. on _____. This DNS is also subject to appeal. A written appeal must be filed in the City Clerk's Office by 5:00 p.m. on _____.

This DNS may be withdrawn at any time if the proposal is modified so that it is likely to have significant adverse environmental impacts; if there is significant new information indicating, or on, a proposals probable significant adverse environmental impacts (unless a non-exempt license has been issued if the proposal is a private project); or if the DNS was procured by misrepresentation or lack of material disclosure.

Carol V. Holland June 25, 2009
 Environmental Coordinator Date

- OTHERS TO RECEIVE THIS DOCUMENT:**
- State Department of Fish and Wildlife
 - State Department of Ecology, Shoreline Planner N.W. Region
 - Army Corps of Engineers
 - Attorney General
 - Muckleshoot Indian Tribe



**City of Bellevue
Development Services Department
Land Use Division Staff Report**

Proposal Name: **T-Mobile**

Proposal Address: 15 140th Avenue NE

Project Description: Replace a parking area light standard with a 120-foot monopole and locate the related equipment shed in the NW corner of the site.

File Number: **08-143285-LB**

Planner: Kenneth A. Thiem, Senior Planner

Applicant: T-Mobile

Decisions Included: Recommend to Hearing Examiner for approval with conditions.

State Environmental Policy Act Threshold Determination: Determination of Nonsignificance
Carol V. Helland

Carol V. Helland, Environmental Coordinator
Development Services Department

Director's Recommendation: **Approval with Conditions**
Michael A. Brennan, Director
Development Services Department

By: *Carol V. Helland*

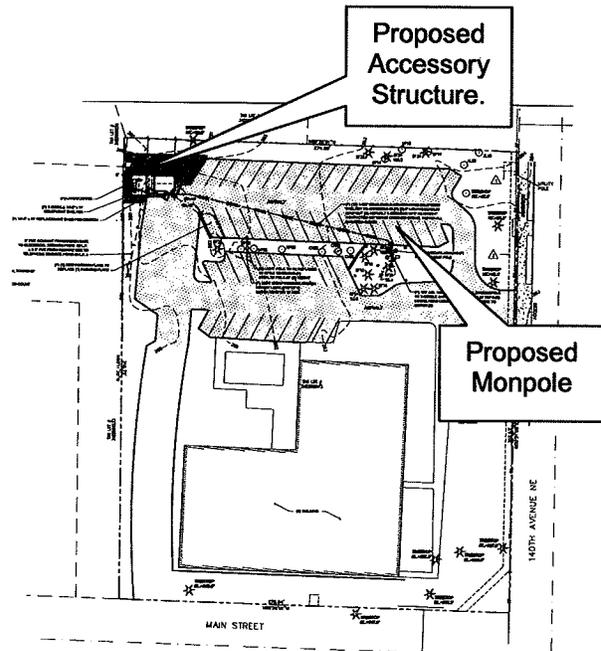
Carol V. Helland, Land Use Director

Notice of Application: 2-19-2009
EBCC/Public Meeting: 03-03-2009
Notice of Recommendation/
Bulletin Publication Date: 06-25-2009
SEPA Appeal Deadline: 07-09-2008
Date of Public Hearing: 07-16-2008

For information on how to appeal a proposal, visit the Development Services Center at City Hall, 450 110th Avenue NE, or call (425) 452-6800. Comments on State Environmental Act Determinations can be made with or without appealing the proposal within the noted comment period for the SEPA determination. Appeal of the decision must be received in the

I. REQUEST/PROPOSAL DESCRIPTION

The applicant requests a Conditional Use Permit (CUP) to replace a parking area light standard with a wireless communication facility that includes a 120-foot tall monopole, and a 160 square foot equipment shed. The shed is proposed in the northwestern corner of the site. Landscaping is proposed around both elements. The monopole is proposed within a grove of mature fir trees up to 110 feet in height. The CUP is a Process III decision by the City Council per the Land Use Code (LUC) 20.35.300 because the project is located within East Bellevue Community Council jurisdiction.



A. Site Description and Context



The site is approximately 2.13 acres (92,782 SF) and located in the northwestern quadrant of the intersection of Main Street and 140th Avenue NE. The site is zoned R-2.5, but contains no residential uses. The existing structure is approximately 12,883 square feet and serves a church use. The frontage landscaping along 140th Avenue NE includes mature ever-green trees and indigenous under-story plants. The surrounding development includes single-family homes to the north, west and south, Sammamish High School to the southeast and multi-family residential on the east side of 140th Ave. NE.

B. Adjacent Zoning & Uses

The surrounding properties are zoned and developed as follows:

North: Single-family (R.2.5) zoning, single-family residential development;

East: Multi-family (R-20 Zoning, multi-family residential development;

Southeast: Single-family (R-4) zoning, Sammamish High school;

South: Single-family (R-1.8) zoning, single-family residential development;

West: Single-family (R-2.5) zoning, single-family residential development



II. TECHNICAL REVIEW

A. Clearing & Grading Department

The Clearing & Grading reviewer has reviewed and approved this application. A future Clearing & Grading permit may be required for the proposed cell tower, depending on the actual area of disturbance and the volume of cut and fill. All site work must comply with all requirements of the City of Bellevue's Clearing & Grading Code.

B. Fire Department

The proposal generally conforms to the Fire Code requirements.

C. Transportation/Right-of-Way

Based on site plans, all of the proposed equipment is to be located entirely on private property. Any communication service lines installed in the right-of-way OR any use of public right of way for the proposed project will require a Right of Way use Permit. The hauling of materials or equipment into and/or from the site totaling more than 10 loads will require a right-of-way Haul Route Permit. Any oversized loads will require at minimum an Annual Truck Permit by the hauling company.

D. Utilities Department

The Utility Department has no concerns about the proposed project.

III. ENVIRONMENTAL IMPACTS OF THE PROPOSAL

The environmental review (SEPA Checklist in project file, City Hall Records Room) indicates no probability of significant adverse environmental impacts occurring as a result of the proposal. The Environmental Checklist submitted with the application adequately discloses expected environmental impacts associated with the project. The City codes and requirements, including the Clear and Grade Code, Utility Code, Land Use Code, Noise Ordinance, Building Code and other construction codes adequately mitigate expected environmental impacts. Therefore, issuance of a Determination of Non-Significance (DNS) is the appropriate threshold determination under the State Environmental Policy Act (SEPA) requirements.

IV. PUBLIC COMMENT AND CITY RESPONSE

Public participation in this application was limited to a few citizens who attended the public meeting, which was held on March 5, 2009, before the East Bellevue Community Council. The following comments were submitted:

A. Comment: Since the height of the communication equipment will be fixed, and the surrounding trees will continue to grow taller, does this create any issues for the proposed facility and what would T-Mobile propose in order to address the issues?

Response: The proposed antennae are approximately 10-15 feet above the tallest trees in the stand near the proposed monopole. Tree growth can block the signal. However, these trees are in a cultivated landscape, close to their maximum height and their growth rate has slowed significantly due to their age/height. According to the project arborist, it would take 15-20 years before the taller trees in this stand could reach the height of the signal. And having foliage at the same elevation as the signal does not necessarily interfere with the signal. However, if tree growth eventually interferes with the signal, then selective pruning

would be used to carefully shape the trees and restore the signal. Topping of trees is not allowed within the City of Bellevue.

B. Comment: Seattle Public Utilities has a 36-inch water transmission line within 140th Avenue NE. Please advise if any digging is proposed within 10-feet of SPU's water line.

Response: The proposed monopole and related equipment are located entirely on the proposal site. None of the proposed work is within 10-feet of the 140th Avenue NE ROW.

C. Comment: As a homeowner immediately adjacent to the proposal site, I would appreciate seeing additional photosimulations of the proposed monopole as seen from my property.

Response: Attachment C of this decision includes three additional photosimulations of the proposed monopole as seen from adjacent residential development to the north. An aerial photograph of your site is also included to identify the location and direction of each view.

V. DECISION CRITERIA

The proposal is consistent with the decision criteria for a Conditional Use Permit per LUC 20.30B.140, as discussed below.

A. The Conditional Use is Consistent with The Comprehensive Plan.

Finding: The proposal is supported by the following goals and policies of the Wilburton Subarea:

1. POLICIES S-WI-33: Utilities should be provided to serve the present and future needs of the subarea in a way that enhances the visual quality of the community (where practical).

The proposed monopole includes antennae located in a canister at the top pole. The color of the canister is required to blend with the color of the monopole and the surrounding trees. At approximately 100-feet in height, the surrounding trees are close to maturity, and their growth rate has slowed significantly compared to younger trees. The project arborist estimates it would take 15-20 years before the vegetation would be tall enough to interfere with the signal. If the signal is interrupted by tree growth, this decision requires the applicant to sensitively prune the trees under the direction of a certified arborist in order to maintain their health and aesthetic value, and restore the signal/coverage to this area. Tree topping is not permitted.

2. Policy UT-40: Require the reasonable screening and/or architecturally compatible integration of all new above-ground utility facilities.

The proposed monopole is surrounded by mature fir trees that are close to the height of the monopole. The monopole is required to be finished in a color that will visually blend with the tree trunk and canopy. The related at-grade equipment is proposed inside a detached accessory structure located in the northwest corner of the site. The accessory structure's scale and design is consistent with the single-family residential neighborhood context. The applicant is required to submit the proposed shed color(s)

for City review and approval. Views of the shed from nearby properties will be softened by existing and proposed vegetation located between the shed and the property lines.

- 3. Policy UT-53: Require all utility equipment support facilities to be aesthetically compatible with the area in which they are placed by using landscape screening and/or architecturally compatible details and integration.**

All of the WCF equipment is proposed inside a small structure that is approximately 160 square feet, with overall dimensions of 14.5 x 11 feet and a height of 11-feet. The structure's proposed setbacks include 5-feet from the site's western boundary and 25 feet from the site's northern boundary. The proposed structure's scale and appearance is consistent with a residential accessory structure, including vertical siding and a pitched roof with charcoal-colored composition shingles. The site is currently buffered from the adjacent properties by site perimeter vegetation required for the church use.

- 4. Policy UT-55: Require the placement of cellular communication facilities in a manner that minimizes the adverse impacts on adjacent land uses.**

The proposed monopole's location within a stand of mature fir trees will soften views of the pole and the canister at the top. The surrounding fir trees and a requirement to paint the monopole a dark green color that blends with the tree trunks will help reduce visual impacts to the surrounding neighborhood. The proposed landscaping around the equipment shed will soften views of it from the single family homes to the immediate north and west.

- 5. Policy UT-56: Encourage permit applicants to submit an area wide plan that demonstrates the lowest land use impacts consistent with telecommunication customer needs.**

The area-wide plan is shown in the Search Area Map (Attachment D). This plan identifies six possible locations within the search ring for a WCF. The six locations were evaluated in detail, including photosimulations of each facility. For each location T-Mobile has provided information on the existing and proposed wireless facilities. The proposal represents the lowest land use impacts because a residentially zoned location is needed to fill the coverage gap and the proposed monopole location is within a grove of mature fir trees, on a property developed with a nonresidential church use.

- 6. Policy UT-55: Minimize visual intrusion of cellular communication facility towers and monopoles in all areas. Provide relief to setback requirements without introducing adverse impacts.**

The proposed monopole facility will be located within a grove of mature fir trees and it exceeds all applicable setback requirements within a residential land use district. The canister which contains the antennae must be finished in a dark green color to visually blend with the surrounding tree trunks and minimize visual impacts to the surrounding neighborhood, as shown in the photo simulations (Attachment C).

- 7. Policy UT-63: New freestanding facility towers and structures should only be considered when no feasible alternative exists or when visual intrusion is less than associated with placing the facility on an existing structure or building.**

The proposal includes an analysis of alternative sites which shows that all of the alternative locations have more adverse visual impacts than the proposed location. Visual impacts to the neighborhood will be minimized by locating the monopole in a stand of mature fir trees, placing the antennae in a canister and painting the canister to blend with the monopole and surrounding tree canopy.

The proposal is consistent with the above-listed policies. The proposal shows care in locating the proposed facilities to minimize visual impacts, as summarized below under criterion B. The location and design alternatives analysis (See Attachment D) identifies the proposed monopole location and height as having the least impact on the immediate neighborhood. While the proposed location is ranked last within the hierarchy of preferred locations for wireless communication facilities (LUC Section 20.20.195.D.2.a), the church parking lot has been identified as a preferred alternative compared to locating the facility within City of Bellevue right-of-way. The proposal meets the overall intent of the Utilities Element of the Comprehensive Plan by locating the proposed facility in a way that minimizes visual impacts and meets T-Mobile's coverage needs, as summarized under criterion E below. The applicant has sufficiently documented the need for the proposed location and height, including drive test and propagation maps, (see Attachment D, Site Analysis).

B. The design is compatible with and responds to the existing or intended character, appearance, quality of development and physical characteristics of the subject property and immediate vicinity.

Finding: The proposed project design is compatible with and responds to the existing character of the neighborhood. The proposed monopole is located in a parking lot among tall fir trees. The tree heights and canopies are sufficient to screen most of the monopole and the canister containing the antennae from the surrounding neighborhood. New landscaping is proposed around the base of the monopole and the related equipment shed to reduce the visual presence of these elements. The following additional measures are proposed to ensure that the installation is compatible with the site context:

1. Locating the monopole and related equipment outside of the right-of-way will help reduce visual impacts to the surrounding neighborhood;
2. Embedding the coax cable inside of the monopole will visually integrate this element;
3. Finishing the canister with an anti-glare color which blends with the monopole and the surrounding tree canopy will soften views of the monopole;
4. Locating the related ground-mounted equipment inside a residential type accessory structure and surrounding the structure with indigenous landscaping will reduce the visual presence of the shed, and
5. A new or existing 6-foot tall fence on the proposal site's boundary will provide additional screening of the related equipment shed.

C. The conditional use will be served by adequate public facilities including streets, fire protection, and utilities.

Finding: The existing site is located at the intersection of two improved public rights-of-way; both are served by adequate public facilities including fire protection.

D. The conditional use will not be materially detrimental to uses or property in the immediate vicinity of the subject property.

Finding: The conditional use will not be materially detrimental to the uses or property in the immediate vicinity of the subject property. The proposed monopole is depicted in photo simulations taken from a number of locations within the surrounding neighborhood (Attachment C). The photosimulations show that the monopole and canister will be surrounded by tall fir trees to visually soften their presence. In addition, the monopole and canister will be painted so these elements blend into the tree canopy. All related at-grade equipment is proposed inside an accessory structure that is scaled and designed for compatibility with the residential context. The shed is surrounded by landscaping to screen it from nearby residents.

E. The conditional use complies with the applicable requirements of the Land Use Code.

Finding: The proposal meets all specific Land Use Code requirements applicable to non-exempt wireless communications facilities per LUC 20.20.195.D 1-9, as summarized below.

1. **Height:** The height limit in this residential zone is 30 feet. The proposed 120-foot tall pole would replace an existing 30-foot tall light pole. This proposed height may be allowed subject to Conditional Use approval, as described in Section I of this report. The proposed height is the minimum necessary for T-Mobile to achieve its coverage objectives given the surrounding tree heights, and adjacent T-Mobile wireless communication facilities. Also attached is an RF Engineer analysis that explains why the requested height is the minimum necessary for the system (Attachment G). This proposed height was determined after extensive drive test analysis was done in this neighborhood (See project File)

The purpose of this Wireless Communication Facility is to enable T-Mobile to provide coverage to its customers in a part of Bellevue where the existing coverage is poor to non-existent. Please refer to Existing Coverage Map and the Proposed Coverage Map (Attachment B). These maps document the existing coverage gap and the coverage that would be achieved from the subject site, particularly inside buildings, for T-Mobile customers.

2. Wireless Communication Facility Location and Design

- a. **Preferred Location (LUC 20.20.195D.2.a):** The Search Ring Map (Project File) shows the area in which a Wireless communication facilities must be located to provide wireless coverage to the subject area. The entire area is zoned residential. The subject proposal is fourth in the "preferred location hierarchy." (LUC Section 20.20.195.D.2.a) However, there are no non-residential zones in close proximity to the search ring. Therefore, a residential zone must be used to provide coverage. The applicant's engineer has certified that the proposed location is necessary to meet T-Mobile's coverage and capacity needs for this area. The Engineer's Certification is provided herein (Attachment G)

- b. **Preferred System Design (LUC 20.20.195D.2.b):** The subject proposal is to replace an existing light standard with a monopole that can accommodate T-

Mobile's antennas. The antennas will be visually integrated into the pole, enabling the proposal to meet the first tier of the preferred system design hierarchy, "integrated with utility support structures."

c. Minimizing Adverse Impacts LUC 20.20.195D.2.c):

Utilizing a replacement pole with integrated antennas and surrounded by mature fir trees will generate the fewest visual impacts on the surrounding neighborhood, as shown in the photo simulations of the proposed facility (Attachment C).

The application includes a letter from the radio frequency engineer stating that the proposed facility complies with radio frequency emission guidelines set forth by the Federal Communications Commission (Attachment H).

3. **Dispersal Limits:** The nearest existing cellular facility is located at the intersection of NE 8th Street and 140th Avenue NE, approximately 2,180 feet from the proposed facility location. Therefore, the 520 feet dispersal requirement has been met (LUC Section 20.20.195.D.3).
4. **Development Standards:** As described in previous sections of this report, all development standards applicable to wireless communications facilities will be met by this proposal as conditioned by this decision.
5. **Radio Frequency Emissions:** Refer to the letter from T-Mobile's radio frequency engineer, which states that the facility will comply with the radio frequency emission standards adopted by the Federal Communications Commission (Attachment H).
6. **Setback Requirements for Freestanding Wireless communication facilities:** All applicable structure setback requirements of the Land Use Code are met under this application.
7. **Independent Technical Review:** No such review was deemed necessary for this application.
8. **Removal of Abandoned Antennas and Towers:** Refer to section VII of this report for applicable condition of approval.

A.

DECISION

After conducting the various administrative reviews associated with this proposal, including applicable land use consistency and City Code and Standard compliance reviews, the Director of the Development Services Department does hereby **RECOMMEND APPROVAL** of the proposed use subject to the following conditions:

VI. CONDITIONS OF APPROVAL

A. GENERAL

1. Codes & Ordinances

The applicant shall comply with all applicable Bellevue City Codes and ordinances including but not limited to:

Applicable Ordinances	Contact Person
Clearing and Grading Code- BCC 23.76	Janney Gwo, 425-452-6190
Construction Codes- BCC Title 23	Bldg. Division 425-452-6864
Fire Code- BCC 23.11	Diana Cochran, 425-452-4561
Land Use Code- BCC Title 20	Ken Thiem, 425-452-2728
Noise Control- BCC 9.18	Ken Thiem, 425-452-2728
Sign Code- BCC Title 22B	Ken Thiem, 425-452-2728
Right of Way Use Code- BCC 14.30	Jon Regalia, 425-452-4599
Utility Code- BCC Title 24	Rob Hutchinson, 425-452-7903

2. Clearing and Grading permit

A Clearing & Grading permit shall be required if the area of site disturbance exceeds 1000 square feet or the combined amount of cut and fill exceeds fifty (50) cubic yards.

Authority: LUC 20.40.490

Reviewer: Ken Thiem, 425-452-2728

3. Landscape Maintenance Assurance

Upon City approval of the landscaping required by this decision, the applicant shall submit a landscape maintenance assurance device (bond or assignment of savings) for 20% of the cost to provide and install all the plant material, along with a copy of the contract for this work. The device shall be held for one year and released after a City inspector has verified that the landscape matches the City-approved plans and all plants are healthy. Bond or assignment of savings templates may be obtained from the project reviewer.

Authority: LUC 20.40.490

Reviewer: Ken Thiem, 425-452-2728

4. Removal of Abandoned Sites

The owner of this facility shall provide the Director with copies of any notice of intent to cease operations that is provided to the Federal Communications Commission (FCC). All Wireless communication facilities and the associated equipment shall be removed by the facility owner within 90 days of the date it ceases to be operational, or if the facility falls into disrepair and is not maintained. Disrepair includes structural features, paint, or general lack of maintenance, which could result in safety or visual impacts.

Authority: LUC 20.20.195.D.8

Reviewer: Ken Thiem, 425-452-2728

3. Colors - Monopole & Canister

The applicant shall submit the proposed color for the monopole and canister and it shall visually blend with the color of the surrounding tree trunks.

Authority: LUC 20.20.195.D.4.a

Reviewer: Ken Thiem, 425-452-2728

4. Shed Color(s)

The applicant shall submit the proposed color(s) for the equipment shed for City review and approval.

Authority: LUC 20.20.195.D.4.a

Reviewer: Ken Thiem, 425-452-2728

5. Tree Growth/Signal Interruption

If the signal is interrupted by tree growth over time, sensitive pruning of the trees shall be allowed through the Land Use Exemption process to restore the signal. The proposed pruning shall be based on the direction of a certified arborist and the health and aesthetic value of the trees shall be maintained. Tree topping is prohibited.

Attachments

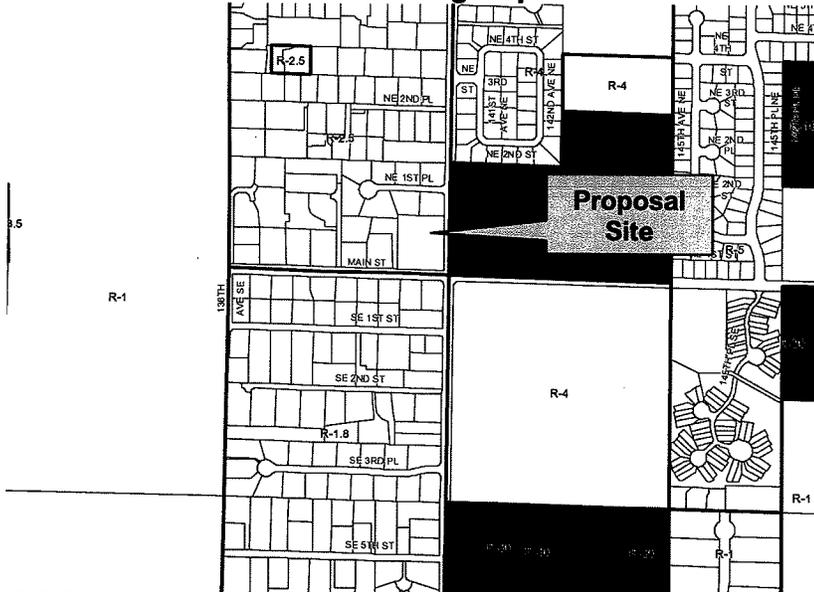
- A: Site Vicinity Map & Area Zoning Map
- B: Existing & Proposed Coverage Maps
- C: Photo-simulation Maps & Views
- D: Alternative Sites Analysis
- E: Proposal Plans
- F: Environmental Checklist
- G: Engineer's Certification
- H: Radio Frequency Emissions Guidelines

ATTACHMENT A

Site Vicinity Map

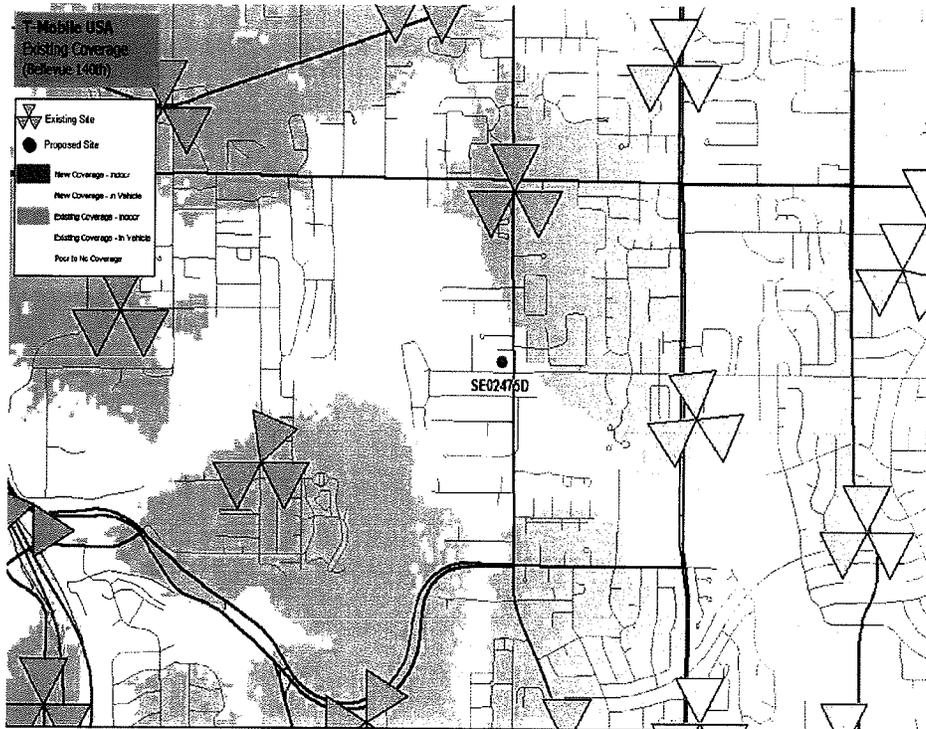


Area Zoning Map

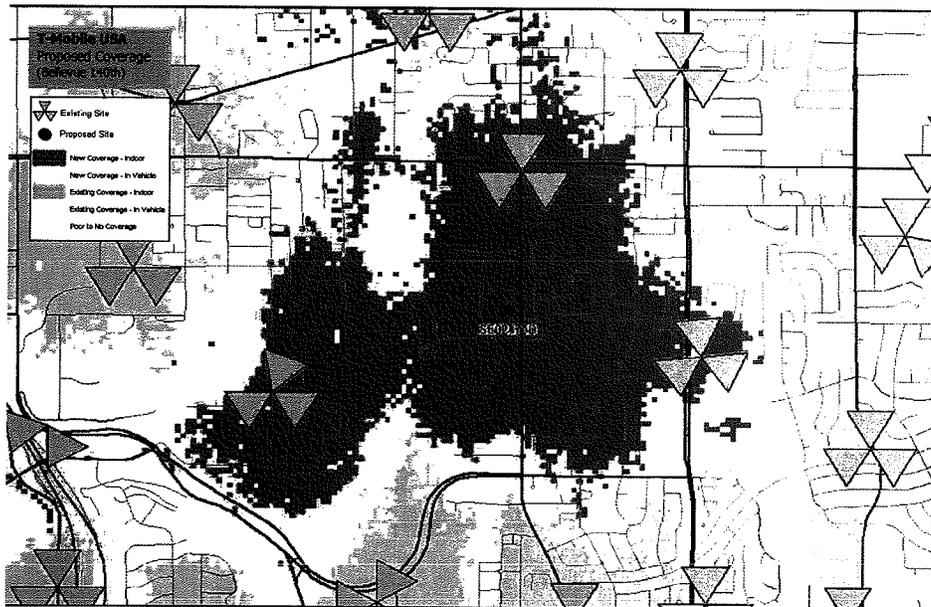


ATTACHMENT B Propogation Maps

Existing Coverage



Proposed Coverage

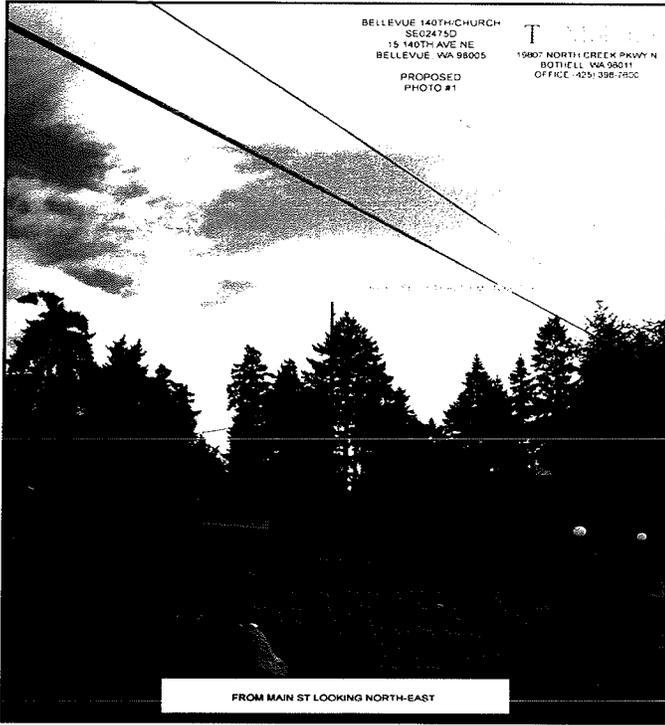


ATTACHMENT C

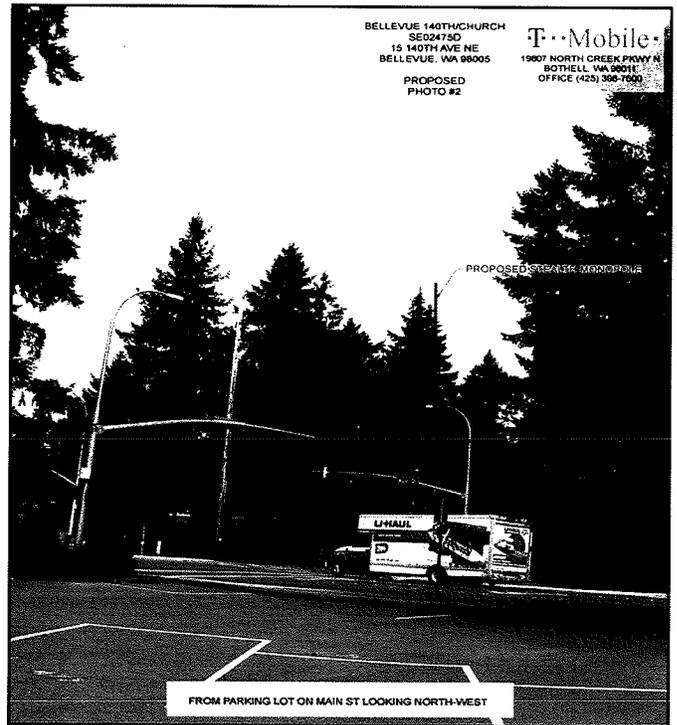
MAP-1
Photo-simulation Views – Location & Direction



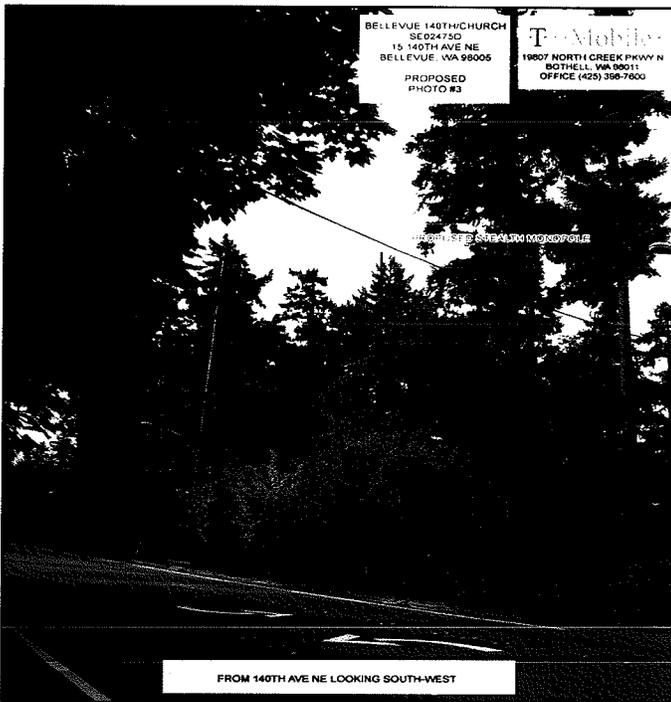
Photosimulation Views - Map 1



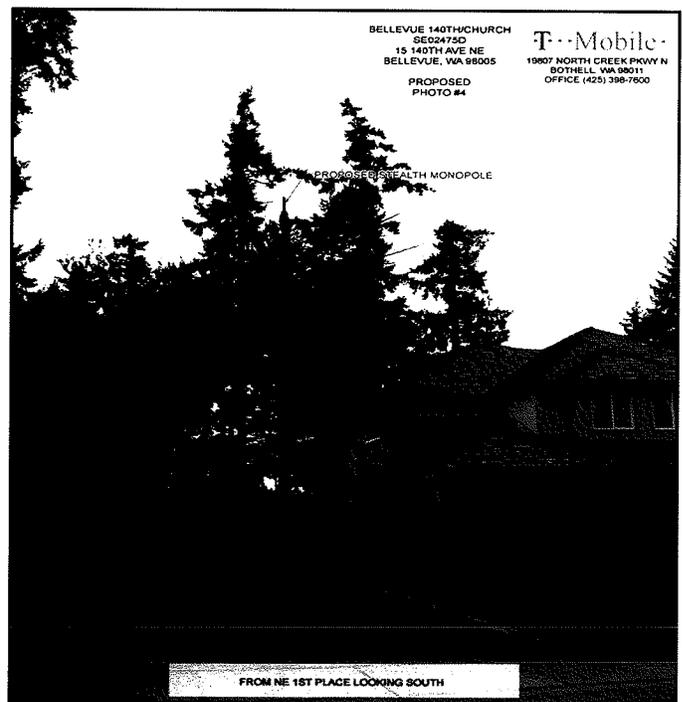
1. Looking Northeast



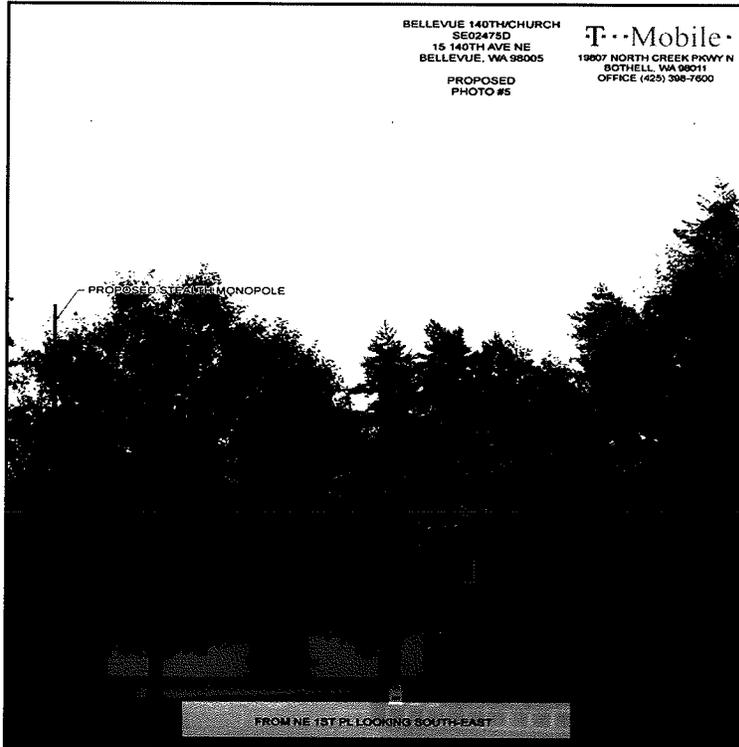
2. Looking Northwest



3. Looking Southwest



4. Looking South

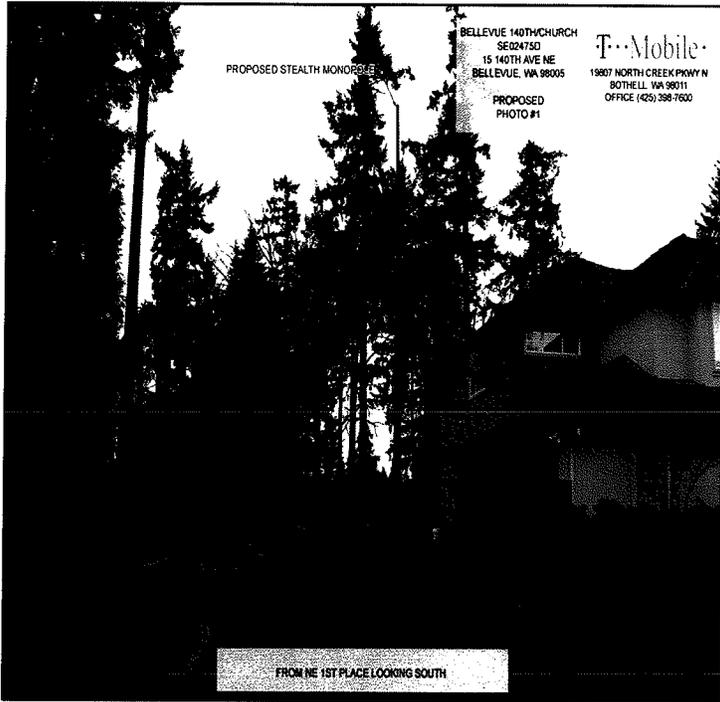


5. Looking Southeast

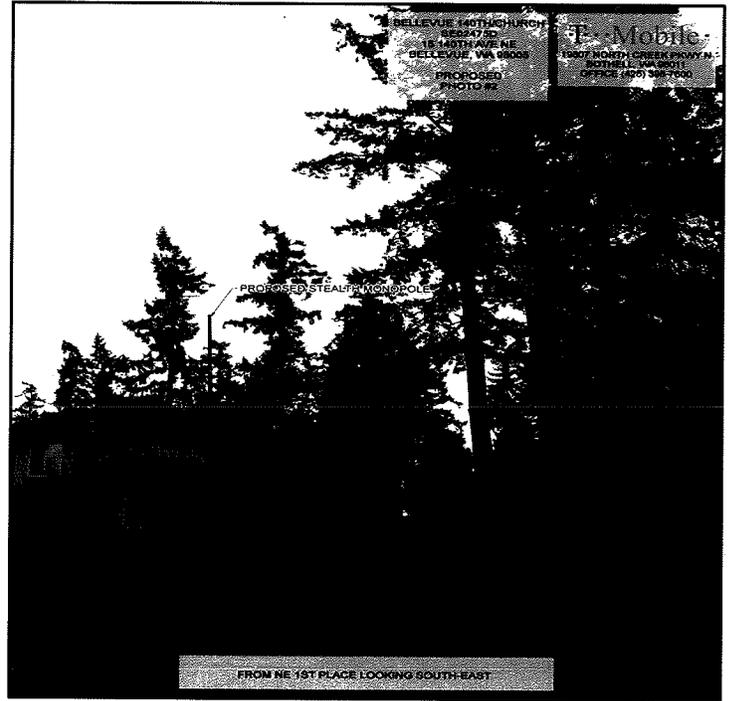
MAP 2
Photo-simulation Views – Location and Direction



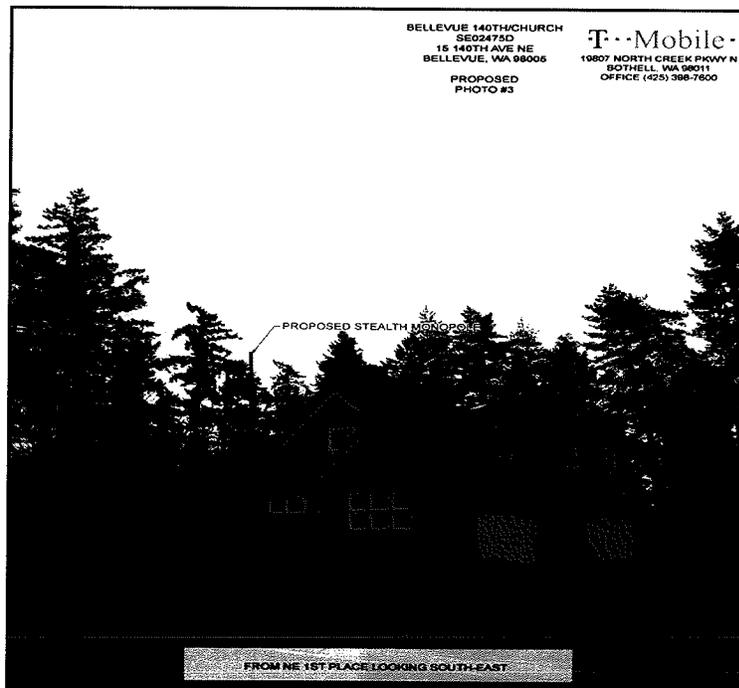
Photosimulation Views – Map 2



1. Looking South



2. Looking Southeast



3. Looking East

ATTACHMENT D
Alternative Site Analysis

ALTERNATIVE ANALYSIS

This section will discuss the alternatives to the proposed WCF location. The subject site is located in the parking lot of the Subject property at 15-140th Avenue NE, at Main Street. The antennas will be contained within a canister at the top of the pole (tip height of 120'). The radio cabinets will be located on adjacent private property within a new equipment shelter building that will be landscaped. The subject proposal will have minimal visual impact to the surrounding area due to the following:

1. The replacement light pole will be contained within a grove of tall trees on the site, which will buffer and screen the pole from the surrounding area;
2. The replacement pole will be painted a dark green to blend in with the trees;
3. The antennas will be located within a canister on the pole;
4. The replacement light pole has been designed so that it is the minimum that will work for T-Mobile's system, while still tall enough to "see" over the surrounding trees to provide the requisite coverage;

The subject area is zoned residential, R-2.5. The closest non-residential zoning is on NE 8th Street where T-Mobile already has a WCF, and east at Main Street & 148th where T-Mobile also has an existing WCF. Therefore, in order to provide coverage to this area, a facility must be located within the residential zone.

The requested height of 120' as discussed is the minimum that will work for T-Mobile's system.

Within the search area, and immediately around it, the following sites were analyzed: 1) PSE utility pole on 140th Avenue NE; 2) PSE utility pole on 140th Avenue NE at Main Street; 3) Light standard at Sammamish High School; 4) PSE utility pole at 140th Avenue SE and SE 3rd Place; 5) Lake Hill Church with a PSE pole across the street; 6) PSE utility pole on 140th Avenue SE at SE 7th Street. On the following pages, I analyze each alternative and why it was chosen.

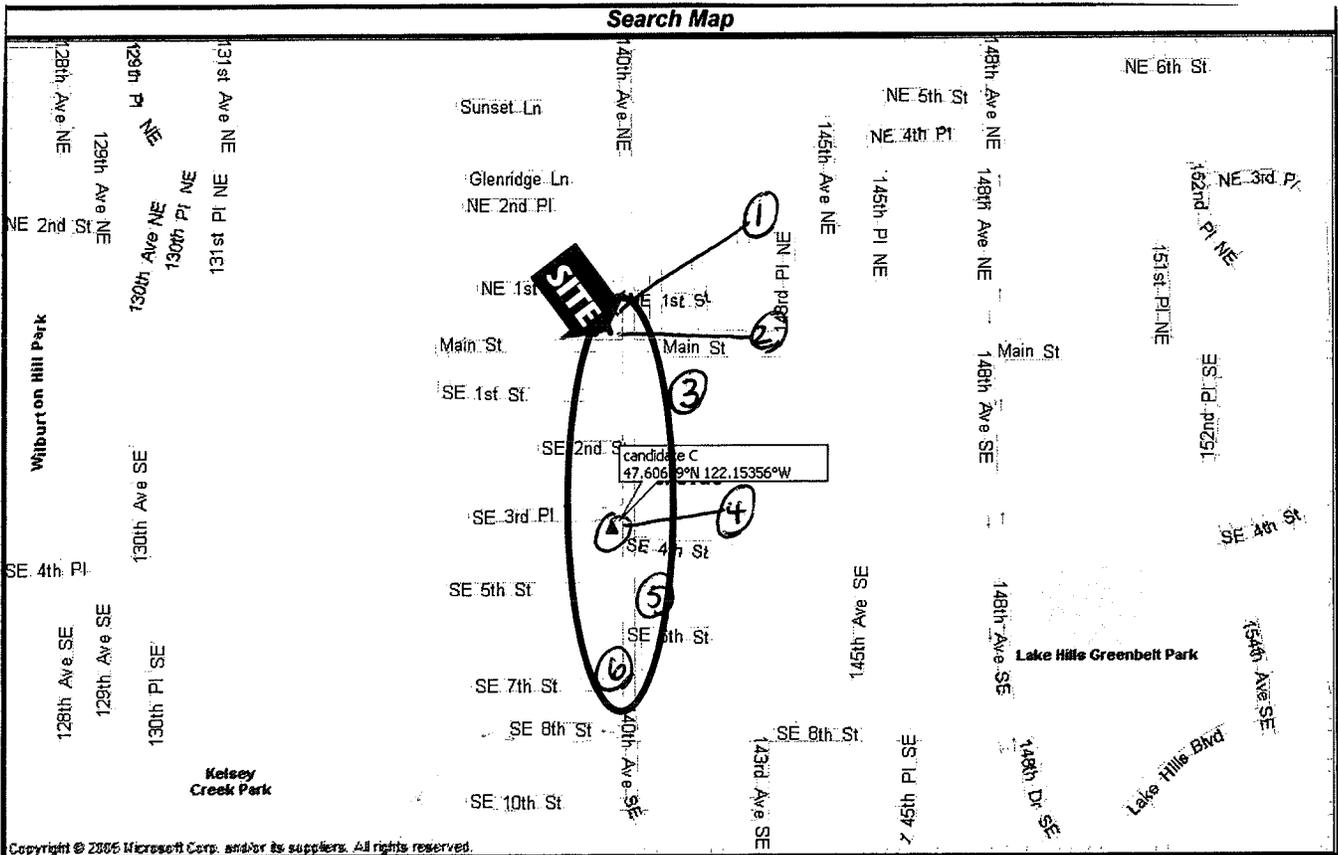
T-Mobile's SE2475D, "Bellevue 140th/Church"
Conditional Use Permit application
15-140th Avenue NE, Bellevue, WA

SEARCH AREA MAP NOTING ALTERNATIVE LOCATIONS

Attached is the Search Area Map issued by T-Mobile's RF Engineer that showed the limits for siting a WCF in this area, along with the alternatives noted on the map.

SE2475D, "Bellevue 140th/Bellevue 7th Day Adventist Church"
 15-140th Avenue NE, Bellevue, WA

Search Area Map



Alternative locations to subject proposal:

1. PSE utility pole on 140th Avenue NE;
2. PSE utility pole on 140th Avenue NE at Main Street;
3. Light standard at Sammamish High School;
4. PSE pole at 140th Avenue SE and SE 3rd Place;
5. Lake Hills Church with PSE pole across 140th Avenue SE;
6. PSE pole on 140th Avenue SE at SE 7th Street.

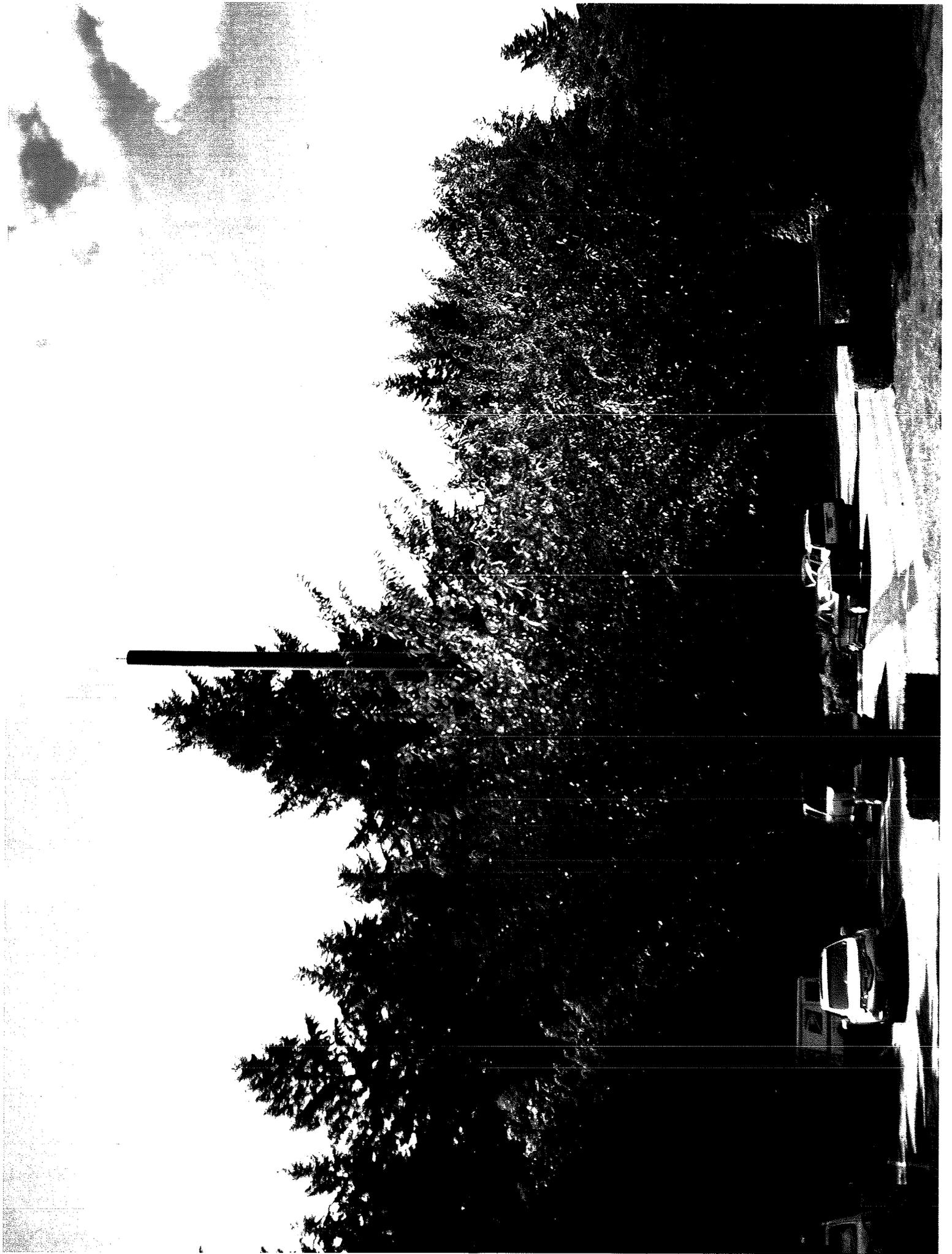
“SITE”-Subject location

ALTERNATIVE ONE-PSE POLE ON 140TH AVENUE NE

The first alternative to the subject light pole replacement in the church parking lot is the PSE utility in the ROW on 140th Avenue NE, just directly east of the subject proposal location. The utility pole is on the west side of 140th Avenue NE, just north of the entrance to the church. PSE explained that this was a very problematic pole due to an electrical riser located on the pole. They did not say it was impossible, but it would be very difficult and that a full application needed to be made for further review. It was decided after looking at alternatives that the light pole in the center of the parking lot would provide better screening than a PSE replacement utility pole under Alternative 1, even though the light pole in the parking lot would have to be taller. The replacement utility pole would be close to 100' at this location (21' above the existing height), with no screening around it. As mentioned in the cover letter, we have past experience with another project like this where a taller monopole/light pole in the center of a treed parking lot was a better alternative than a taller utility pole in the ROW. As there is tremendous natural screening at the subject site, it was determined to go with the pole in the parking lot.

Attached is a picture of the PSE pole that is alternative 1, and a picture of the monopole at 157670 NE 4th Street located in the trees (the prior City of Bellevue WCF).





T-Mobile's SE2475D, "Bellevue 140th/Church"
Conditional Use Permit application
15-140th Avenue NE, Bellevue, WA

ALTERNATIVE TWO-PSE POLE ON 140TH AVENUE NE AT MAIN STREET

Alternative two is a PSE utility on the west side of 140th Avenue NE at Main Street. This alternative was rejected as there was no room on the adjacent church property for the radio cabinets. The area west of the utility pole on the church property is landscaped as the church's front "entrance," and there was no viable spot for the equipment. Utilities running down 140th Avenue NE made a large underground vault at this location impossible as well.



Main St.



BELLEVUE
HADY ADVENTIST
CHURCH

ALTERNATIVE THREE-LIGHT STANDARD AT SAMMAMISH H.S.

The third alternative is a light standard at the Sammamish High School. We were originally interested in this location, and I made contact with the Bellevue School District. However, we rejected this candidate for 2 reasons: 1) a taller light standard would have no screening or buffering around it unlike the subject site, and it was determined upon reviewing the drive test data that there is a large coverage gap to the NW that T-Mobile needs to provide additional coverage. The subject site is a far superior location to providing that service than the light standard at the football field.



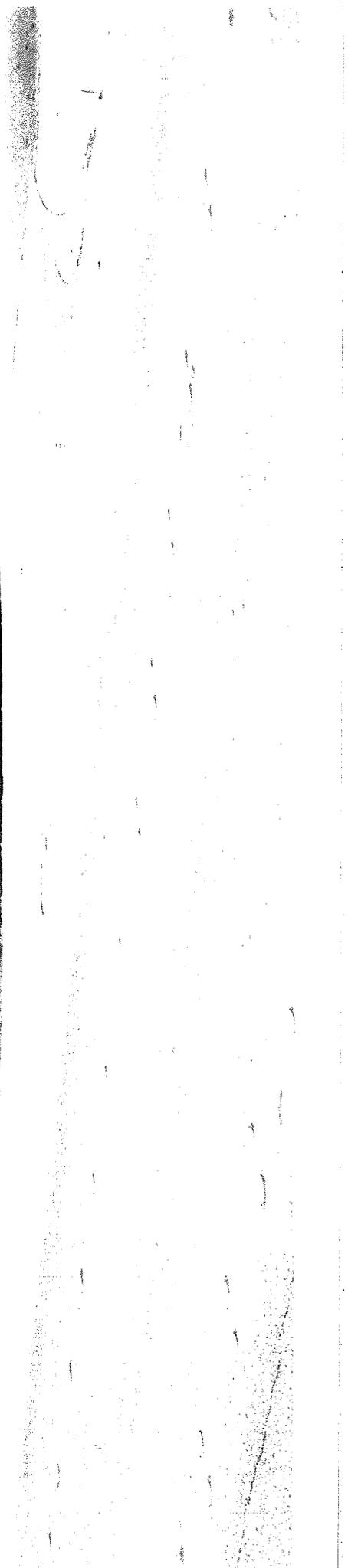
ALTERNATIVE FOUR-PSE POLE ON 140TH AVENUE SE AT SE 3RD PLACE

Alternative four is another utility pole on 140th Avenue SE at SE 3rd Place. The proposal was to replace the PSE utility pole on 140th Avenue with a pole 21' taller, with the radio cabinets to be located in a vault in the ROW on SE 3rd Place (south side of the street). Per the attached survey, there is a gas line running right through this area that eliminated this as a possibility. Additionally, City of Bellevue Right of Way department rejected this location as it's a drainage swale and is not a viable location for an equipment vault.



SE 3 PL

W 3





LAKE HILLS CHURCH

50

ONE WAY

LAKE HILLS CHURCH

T-Mobile's SE2475D, "Bellevue 140th/Church"
Conditional Use Permit application
15-140th Avenue NE, Bellevue, WA

ALTERNATIVE FIVE-LAKE HILLS CHURCH

At this location, the idea was to locate the radio cabinets on the Lake Hills Church property and utilize one of the tall utility poles on the west side of 140th Avenue. We did have some concerns about the potential visual impact to the adjacent neighbors from a taller pole at this location. The connection between the radio cabinets and the antennas would be underground. Ultimately, Lake Hills Church decided not to lease to T-Mobile, so this candidate was rejected (see attached letter).

ATTACHMENT E

Proposal Plans

ATTACHMENT F
Environmental Checklist

ENVIRONMENTAL CHECKLIST

12/30/08

If you need assistance in completing the checklist or have any questions regarding the environmental review process, please visit or call the Permit Center (425-452-6864) between 8 a.m. and 4 p.m., Monday through Friday (Wednesday, 10 to 4). Assistance for the hearing impaired: Dial 711 (Telecommunications Relay Service).

BACKGROUND INFORMATION

Property Owner: Western Washington Conference of Seventh-Day Adventists, doing business as Bellevue Seventh-Day Adventist Church.

Proponent: T-Mobile

Contact Person: Gary Abrahams

(If different from the owner. All questions and correspondence will be directed to the individual listed.)

Address: PO Box 1557, Bothell, WA 98041

Phone: 206-282-2357

Proposal Title: T-Mobile's SE2475D, "Bellevue 140th/Church"

Proposal Location: 15-140th Avenue NE, Bellevue, WA, on 140th Avenue NE at Main Street
(Street address and nearest cross street or intersection) Provide a legal description if available.

Legal per assessors records:

The south 348.58 feet of the southeast quarter of the northwest quarter of Section 34, Township 25 North, Range 5 East, W.M. in King County, Washington;
Except the west 990 feet;
And Except the east 30 feet and the south 30 feet condemned under King County Superior Court Case No. 104461 for 140th Avenue NE and Main Street.

Please attach an 8 ½" x 11" vicinity map that accurately locates the proposal site.

Give an accurate, brief description of the proposal's scope and nature:

1. General description:

T-Mobile proposes to construct an unmanned wireless communication facility ("WCF") in Bellevue, Washington. The proposed project location is at the Bellevue Seventh-Day Adventist Church at 15-140th Avenue NE at Main Street ("Subject Property"). The proposed project consists of replacing an existing light pole in the center of the parking lot of the church property. The light pole is presently 30.7' in height. The replacement light pole will be 120' (tip height) in height, and 24" in diameter. It will be painted a dark green to blend in with the existing trees. The antennas will be located within a canister at the top of the pole and will not be visible. One (1) small GPS antenna will be located on the side of the pole. All conduit for T-Mobile's installation will be located within the replacement light pole. There will be six (6) antennas located on the top of the pole, on 2 rad centers, in the canister. The radio cabinets will be located within a new equipment shelter building that will be located in the NW quarter of the church property. The existing church storage building will be replaced with a new storage building that will match T-Mobile's equipment building. Both equipment buildings will be extensively landscaped. A 2nd light pole in the center of the church parking lot will be replaced with a light pole at the same height as existing to match the design and color of the replacement light pole/monopole. One parking space will be used for the WCF and replaced with one parking space in the center island. The replacement pole will be moved a maximum of 9' to the east so that the south facing Cobra light will miss the tree and tree branches just to the south.

Telco and power lines will run underground from the light pole to the radio cabinets.

T-Mobile has identified a coverage gap in its system in the subject area identified on the Search Ring Map (hereinafter "Search Ring") attached to this application. The proposed site is critical to filling that coverage gap, both in-building and outdoor coverage. The site is in a residential area, zoned Residential-2.5, and any non-residentially zoned areas are either unavailable or outside of the Search Area. The particular pole location at issue was chosen as the best choice to provide coverage to the subject area, the principal area of which is south and NW/east/west of the subject site. The proposed WCF will fill that coverage gap.

2. Acreage of site: 2.00 acres.

3. Number of dwelling units/buildings to be demolished: 0

4. Number of dwelling units/buildings to be constructed: 0

5. Square footage of buildings to be demolished: Approximately 150 square feet (existing church storage building to be replaced).

6. Square footage of buildings to be constructed: Equipment shelter building will have 161 square feet, plus 161 square feet for Church's new storage building.

7. Quantity of earth movement (in cubic yards): 40 cubic yards +/- (2 equipment buildings and foundation for replacement light pole)

8. Proposed land use: Wireless Communication Facility ("WCF")

9. Design features, including building height, number of stories and proposed exterior materials:

The replacement light pole will be round, 120' in height with the 6 antennas within a canister at the top of the pole. All conduit will be contained within the pole. The equipment shelter building and the church's new storage building will match the existing church building in color and texture.

10. Other

Estimated date of completion of the proposal or timing of phasing: Third quarter, 2009.

Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

No.

List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Noise report from SSA Acoustics, and NIER report from BJ Thomas.

Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. List dates applied for and file numbers, if known.

There are no other applications, other than the subject application, pending for this property.

List any government approvals or permits that will be needed for your proposal, if known. If permits have been applied for, list application date and file numbers, if known.

Conditional Use Permit (LB), SEPA determination and building permit (CD).

Please provide one or more of the following exhibits, if applicable to your proposal. None applicable.
(Please check appropriate box(es) for exhibits submitted with your proposal):

- Land Use Reclassification (rezone) Map of existing and proposed zoning
- Preliminary Plat or Planned Unit Development
Preliminary plat map
- Clearing & Grading Permit
Plan of existing and proposed grading
Development plans
- Building Permit (or Design Review)
Site plan
Clearing & grading plan
- Shoreline Management Permit
Site plan

A. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site: X Flat Rolling Hilly Steep slopes Mountains Other

b. What is the steepest slope on the site (approximate percent slope)?

5% ✓

c. What general types of soil are found on the site (for example, clay, sand, gravel, peat, and muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

Not applicable.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

No.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

Grading will be required for the new Shelter building and the replacement storage building. Less than 40 cubic yards of soil will be excavated for both buildings and the replacement light pole.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Best practices will be employed to prevent any erosion.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

The project will result in new impervious surface of 532 square feet (the 2 buildings and 1 parking space). The

overall site contains 86,915 square feet (2.00 acres). Existing impervious surface area equals 51,225. An existing area of 742 square feet will be landscaped that is currently impervious. After construction is completed, 61% of the parcel will be impervious surface area which is below the 80% allowed under the City of Bellevue code (section 20.20.010, Uses in Land use Districts, R-2.5 zone, note 36 which states that: "Impervious surface limits for legally established nonconforming nonresidential uses and for new allowed nonresidential uses in these residential land use districts shall be 80 percent."

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

None necessary.

2. AIR

a. What types of emissions to the air would result from the proposal (i.e. dust, automobile odors, and industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Small quantities of dust and exhaust will be released from construction vehicles and construction activities during the approximate 1-month construction phase. The completed facility will not generate emissions.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No.

c. Proposed measures to reduce or control emissions or other impacts to the air, if any:

None necessary.

3. WATER

a. Surface

(1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

No.

(2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If Yes, please describe and attach available plans.

No.

(3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

None.

(4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

Not applicable.

(5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No.

(6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No.

b. Ground

(1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description.

There will be no ground water withdrawal, or water discharge to ground water associated with this development.

(2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals...; agricultural; etc.) Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Not applicable.

c. Water Runoff (Including storm water)

(1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Not applicable-runoff will be channeled through existing collection routes.

(2) Could waste materials enter ground or surface waters? If so, generally describe.

No. Connection to water and sanitary sewer are not required for this project.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

This project will not have any significant impact on water runoff; no additional measures are proposed.

4. Plants

a. Check or circle types of vegetation found on the site:

X deciduous tree: alder, maple, aspen, other

X evergreen tree: fir, cedar, pine, other

X shrubs

X grass

- pasture
- crop or grain
- wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other
- water plants: water lily, eelgrass, milfoil, other
- other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

No vegetation will be removed for this project.

c. List threatened or endangered species known to be on or near the site.

None known.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Landscaping is proposed around all sides of the equipment shelter building and the replacement storage building, and landscaping is proposed around the replacement light pole.

5. ANIMALS

a. Check or circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

- Birds: hawk, heron, eagle, songbirds, other:
- Mammals: deer, bear, elk, beaver, other:
- Fish: bass, salmon, trout, herring, shellfish, other:

b. List any threatened or endangered species known to be on or near the site.

None known.

c. Is the site part of a migration route? If so, explain.

No.

d. Proposed measures to preserve or enhance wildlife, if any:

None proposed.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy need? Describe whether it will be used for heating, manufacturing, etc.

Standard electric power will be required for the antennas and radio cabinets.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

c. What kinds of energy conservation features are included in the plans of the proposal? List other proposed measures to reduce or control energy impacts, if any:

Not applicable.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

None.

(1) Describe special emergency services that might be required.

No special emergency services are required for this project.

(2) Proposed measures to reduce or control environmental health hazards, if any.

Not applicable.

b. Noise

(1) What types of noise exist in the area which may affect your project (for example, traffic, equipment, operation, other)?

None.

(2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example, traffic, construction, operation, other)? Indicate what hours noise would come from the site.

This proposal will create negligible amount of noise during the 1-month construction period. The radio cabinets will be contained within the Shelter, and will comply with all noise regulations of the City of Bellevue.

(3) Proposed measures to reduce or control noise impacts, if any:

Placing the radio cabinets within the Shelter will control any noise impacts for this project.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties?

The current use of the site is as a church, Bellevue Seventh Day Adventist Church. Adjacent properties are north/south/east and west are -single family residential; structures. Sammamish High School is kiddy corner from the church.

b. Has the site been used for agriculture? If so, describe.

No.

None proposed.

10. Aesthetics

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The replacement light pole will have a tip height of 120'.

- b. What views in the immediate vicinity would be altered or obstructed?

None. The area is flat and the light pole/monopole will be surrounded by trees that will screen the WCF.

- c. Proposed measures to reduce or control aesthetic impacts, if any:

Locating the antennas within a canister, painted the pole a dark green, and locating the replacement light pole in the trees will control aesthetic impacts.

11. Light and Glare

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

The proposed WCF will not produce any additional light or glare.

- b. Could light or glare from the finished project be a safety hazard or interfere with views?

No.

- c. What existing off-site sources of light or glare may affect your proposal?

None.

- d. Proposed measures to reduce or control light or glare impacts, if any:

None required.

12. Recreation

- a. What designated and informal recreational opportunities are in the immediate vicinity?

The only informal opportunity is Sammamish High School nearby.

- b. Would the proposed project displace any existing recreational uses? If so, describe.

No.

- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

None required.

13. Historic and Cultural Preservation

- a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers

c. Describe any structures on the site.

Church buildings and storage building.

d. Will any structures be demolished? If so, what?

Yes, an existing storage building will be demolished.

e. What is the current zoning classification of the site?

R-2.5.

f. What is the current comprehensive plan designation of the site?

Residential.

g. If applicable, what is the current shoreline master program designation of the site?

Not applicable.

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

No.

i. Approximately how many people would reside or work in the completed project?

None.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any:

None required.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The proposal complies with Bellevue zoning regulations concerning the siting of WCF's. T-Mobile strives to integrate its projects into the fabric of the surrounding community. Locating the antennas on a replacement light pole in the parking lot surrounded by trees will ensure the project is compatible with the surrounding area.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

None.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

c. Proposed measures to reduce or control housing impacts, if any:

known to be on or next to the site? If so, generally describe.

None known.

- b. Generally describe any landmarks or evidence of historic, archeological, scientific, or cultural importance known to be on or next to the site.

None noted.

- c. Proposed measures to reduce or control impacts, if any:

None required.

14. Transportation

- a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

The subject parcel is on 140th Avenue NE.

- b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

Not Applicable.

- c. How many parking spaces would be completed project have? How many would the project eliminate?

The subject proposal will use one parking space, and that parking space will be replaced in the center island.

- d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

No.

- e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

- f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

Approximately one trip per month will be required for routine maintenance.

- g. Proposed measures to reduce or control transportation impacts, if any:

None required.

15. Public Services

- a. Would the project result in an increased need for the public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

No.

- b. Proposed measures to reduce or control direct impacts on public services, if any.

None required.

16. Utilities

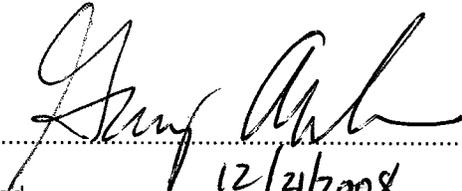
a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other. [underlined rather than circled]

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

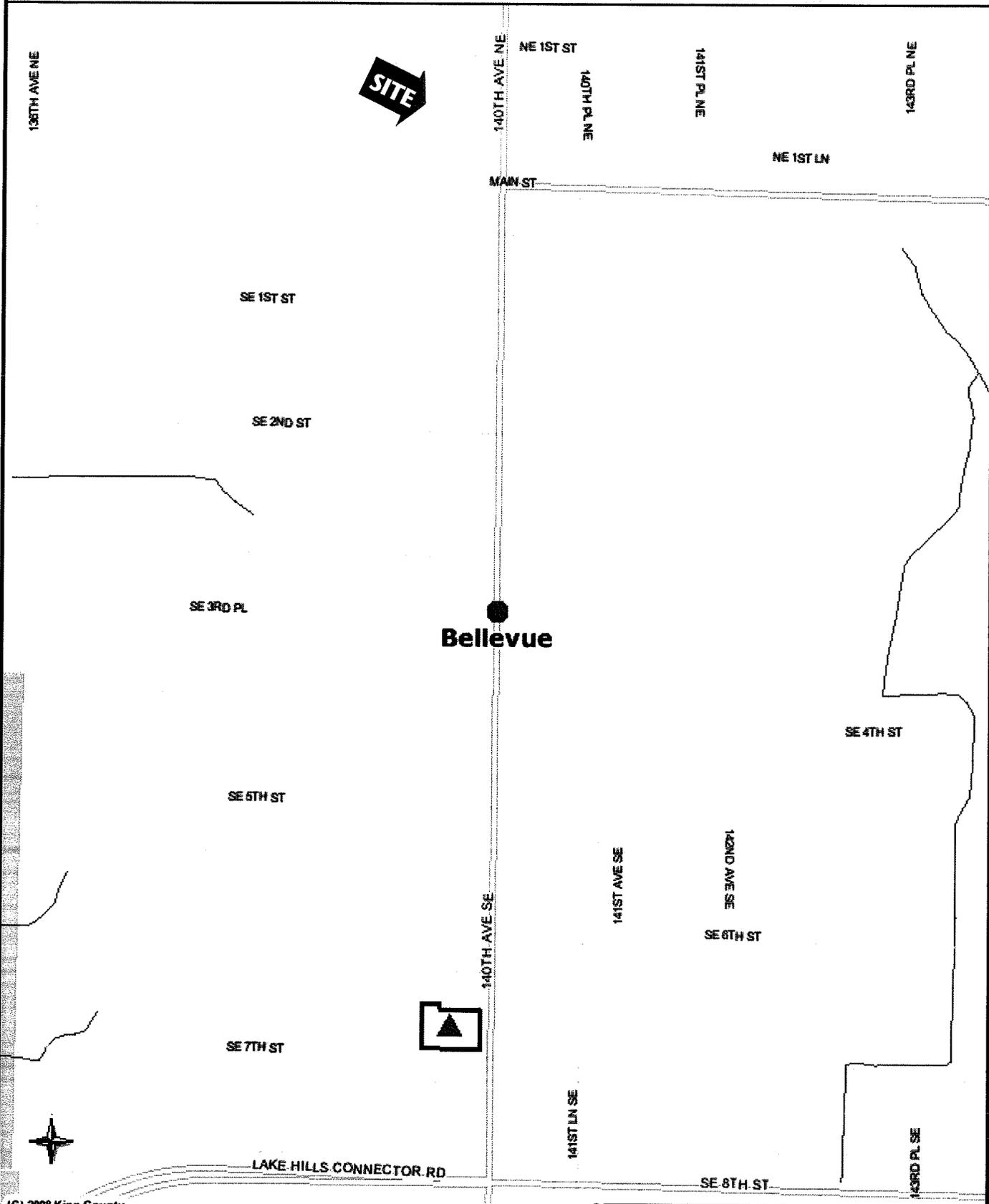
Electric and phone services are required for this project. Power will be provided by PSE. Telephone service will be provided by Qwest. Water and sewer services are not required for this project.

Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature.....
Date Submitted..... 12/31/2008

iMAP



Bellevue



(C) 2008 King County

0 404ft

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Date: 1/30/2008 Source: King County iMAP - Property Information (<http://www.metrokc.gov/GIS/iMAP>)

ATTACHMENT G
Engineers Certification

**CERTIFICATION PURSUANT TO LUC 20.20.195 D
FOR NON-EXEMPT WIRELESS COMMUNICATION FACILITIES**

Site No: **SE2475D**
Site Name: **Bellevue 140th**
Location: **15 140th Ave NE**
Application #

The proposed facility has been reviewed for compliance with the requirements of the Land Use Code Section 20.20.195 D. Based on that review, the following certification has been made (all checked boxes apply):

HEIGHT – The heights of 120' AGL is the minimum necessary for effective functioning of T-Mobile's network. (20.20.195 D. 1.)

WCF LOCATION AND DESIGN - The maps attached hereto indicate the geographic area within which this facility must be located to meet the identified coverage or capacity need of T-Mobile. (20.20.195 D. 2.)

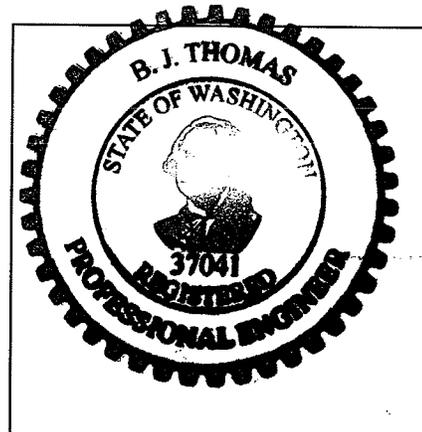
WCF EQUIPMENT – The WCF Equipment is the minimum size necessary to support operation of the T-Mobile WCF. (20.20.195 D. 4. d.)

This certification is dated this 8th day of December 2008.


Signature

B. J. Thomas, P.E.
Name of Licensed Engineer

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ATTACHMENT H

Radio Frequency Emission Guidelines



Radio Frequency Engineer Site Analysis

T-Mobile Project No.: SE02475D

Project Name: Bellevue 140th

Project Description: Install 6 antennas on a light pole

Location: 15 140th Ave NE, Bellevue, WA

Date: December 16, 2008

T-Mobile Site Selection Overview

Wireless systems are expanded or introduced in a given area to improve service to customers. There are typically three reasons to add a new facility: extending the coverage to new areas, increasing the capacity of the system within the current service area, or improving quality. Some sites do all three.

Coverage:

Coverage can be defined as having a certain level of signal strength in a particular area. T-Mobile's target is to provide -76dBm of signal strength to our customers in all areas. This level of coverage guarantees reliable signal strength inside buildings to provide excellent voice quality in residential neighborhoods and commercial areas. In today's competitive marketplace, T-Mobile requires adequate coverage to be competitive and to fulfill our responsibilities under our FCC license.

Existing and proposed coverage is demonstrated by use of propagation maps and drive test data. The propagation maps are computer simulations of wireless signal coverage in a given area. One map shows the predicted coverage as it exists without the proposed facility. The other map shows predicted coverage with the proposed facility in place.

Capacity:

Capacity is the number of calls that can be handled by a particular antenna site. When we make phone calls, our mobile phones communicate with a nearby antenna site that then connects to land based phone lines. Ongoing phone calls occupy the resources of the serving site, which can handle only a limited number of calls. When a particular antenna site is handling a sufficient number of calls the available RF channels assigned to that site are used up. When this occurs, the wireless phone user will hear a busy signal on his or her phone. The call traffic of antenna sites is continuously monitored and analyzed so that overloading of sites is prevented. Careful projection allows sufficient lead time to design, permit, and construct the wireless facility prior to exceeding the capacity of surrounding sites. Capacity cell sites are typically required in

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areas that currently have sufficient coverage. The objective for a capacity site is to handle call increased volume rather than increase a coverage area.

Interference:

In areas with good coverage, phone calls may still have poor quality that the caller hears as warbled voices or temporary loss of communication. This is often caused by interference. Wireless telephone systems reuse specific radio frequencies at different cell antenna locations. When frequencies are reused at nearby sites, interference may result. Engineers work to achieve the most efficient use of limited frequency resources and reduce interference.

Unfortunately, there are still areas where interference is nearly unavoidable. This typically occurs in areas where one antenna site is having trouble handing off calls to another. On a freeway or busy roadway, for example, the network juggles a call between competing antenna sites seeking to find the best one. When this occurs, the solution is often to locate a new antenna site as close to the location where the bad handoff is occurring. Interference is documented by measuring received call quality (Rx Qual) during a drive test similar to that performed to measure coverage. Rx Qual is a measurement of digital data (voice signal) lost as the result of poor communication between adjacent cell sites. Drive test maps demonstrate the Rx Qual of the area as it exists both with and without the proposed cell site.

Site Selection Process for this Location

This site is needed to provide coverage to the neighborhoods (residential and commercial areas) surrounding the corner of Main Street and 140th Ave NE in Bellevue.

This determination was a result of a combination of customer complaints and service requests, and preliminary design analysis as illustrated at Attachments 1A and 1B. Terrain data within the service area is entered into a computer modeling program along with a series of variables, such as proposed antenna height, available radio frequencies and wireless equipment characteristics. From this information T-Mobile's RF engineers determined an area for the optimum location and height of the Wireless Communication Facility (WCF) antenna to maximize the coverage objective.

The specific location of the proposed site has been selected to maximize coverage while minimizing the antenna height requirement. Significant deviation from this location will result in reduced effectiveness, including possible invalidation of the site candidate altogether. The required antenna height is the minimum acceptable to provide the needed coverage with respect to that from neighboring cell sites. Lower antenna height will result in reduced effectiveness, again including possible invalidation of the candidate. In some cases, an increased antenna height is possible which can allow some greater flexibility in location placement. However, too much antenna height is unacceptable as it creates interference conditions that degrade performance of one or more other existing cell sites in the T-Mobile network.

When this technical analysis was completed, a search area map and other requirements were provided to T-Mobile's real estate and zoning specialists. With this information in hand, T-Mobile

ranked potential sites. Whenever feasible, T-Mobile strives to acquire property that is properly zoned and adjacent to compatible land uses. T-Mobile attempts to select a location that minimizes or limits any negative visual impacts on adjacent or nearby residential areas to the greatest extent possible. Sites adjacent to existing tall power lines, antenna facilities, water treatment facilities, and on the tops of buildings are selected when they meet the other technical requirements of the system. New, freestanding towers are avoided as are locations adjacent to view corridors or where demolition is required that would be detrimental to the existing character of the neighborhood. Rooftop and utility pole applications are favored where the design can be screened or incorporated into the existing structure and mechanical equipment can be placed out of view.

After viewing the area, the candidates considered for location, included other existing utility poles along Main Street near the proposed site location.

Eliminated from consideration are sites where zoning ordinances prohibit the location, insufficient room for mechanical equipment is available, required setbacks cannot be achieved or landowners are not interested in leasing property.

Two coverage plots are attached. The first demonstrates the existing level of service. The second plot demonstrates the service that will be provided by the new location at a height of 123 feet (antenna tip height). The colors on the map indicate the different levels of coverage.

The legend of the prediction plot shows several different classes of best servers. The various colors of the plot indicate where a T-mobile handset can be reliably used to make and receive telephone calls in the presence of varying receive signals. The terrain, foliage, nearby structures, and WCF location are taken into account. The further the distance from the WCF, or the more abundant the clutter (trees, buildings, etc.) between the WCF and the handset, the weaker the receive signal will be. The following is a short explanation of each server class/color:

Green: Indoor coverage represented by receive signals equal to or greater than -76 dBm

Yellow: In-Vehicle and outdoor coverage are represented by receive signals greater than or equal to -84 dBm.

White: No coverage or unreliable coverage

The various parameters of the model used include terrain and clutter and are modified to more accurately reflect the actual terrain and topography effects of the specific location on the radio coverage predictions.

Other factors, not represented on the plot, include the ability of the site to handle the required call capacity or volume of calls and to provide the extent of data and other services required by T-Mobile customers. This site has been designed to provide coverage consistent with these factors. Finally, T-Mobile RF engineers have determined that this height and location is necessary for the effective functioning of the minor communication utility.

Enhanced 911 (E911) Requirements

In addition to providing improved service to T-Mobile customers, the proposed antenna location is needed to meet Federal Communications Commission (FCC) requirements for Enhanced 911 (E911) service. The wireless E911 program is divided into two phases. Phase I requires wireless carriers, upon request from a local Public Safety Answering Point (PSAP), to report the telephone number of a wireless 911 caller and the location of the antenna that received the call. Phase II of the E911 program requires wireless carriers to provide far more precise location information, within 50 to 100 meters in most cases.

The FCC established a four-year schedule for Phase II. It began on October 1, 2001 with a target completion date of December 31, 2005. Provision of E911 service in accordance with FCC requirements is a major component of the demand for additional cell sites. In addition to providing greater signal strength for in-building coverage that will provide better service to residential customers in the area, the proposed WCF will provide more precise triangulation for providing E911 service as required by the FCC. This will allow a person who is using E911 because of an emergency to be found more quickly because their location will be more easily determined as this and other antenna sites are added to the wireless network.

Conclusion

T-Mobile engineers have carefully designed this site to maximize quality of service to our customers, which can best be accomplished at a height of 120 ft (antenna tip height). This location was also selected because of its position relative to existing sites, providing favorable site geometry for federally mandated E911 location accuracy requirements and efficient frequency reuse. Good site geometry is needed to achieve accurate location of mobile users through triangulation with existing and proposed sites.

RELATED INFORMATION

About T-Mobile's Wireless Network

T-Mobile operates the largest all digital, nationwide wireless network based on the globally dominant GSM (Global System for Mobile Communications) technology. T-Mobile's entire network has been enhanced to provide customers wireless Internet access and operates the largest carrier owned "Wi-Fi" wireless broadband network in the world with service in over 5,100 public locations under the name T-Mobile HotSpotsm.

Overview of Wireless Technology

Wireless service operates through cellular radio telephone networks, which are comprised of thousands of cell antenna sites, switching facilities and other network elements. All cell antenna sites are radio frequency (RF) transmission towers operating at different frequencies. Each wireless carrier is assigned a very limited amount of frequency, which is divided into certain number of RF channels. RF Channels are assigned to each of the cell sites for communication with our handheld wireless phones. Since the number of channels is very limited, they have to be reused at different cell sites. The problem with reusing RF channels is the potential for

interference. When a cell site is using the same RF channel as another cell site nearby this can cause interference. Sometimes when you use a cell phone you may hear a metallic sound or wobbling. This is probably caused by interference.

In order to minimize the interference from one site to another site that are using the same RF channel, all cell sites transmit at very low power level. The output of the WCF equipment cabinet is typically about 20 Watts. The RF emissions from a wireless antenna site are very minimal compared to the output power of other RF equipment. For example, TV antenna towers power output is in excess of 1000 Watts. Due to the low-level power output of wireless antennas, each cell site covers only a very limited area. In order to provide consistent, homogenous, quality wireless service, cell antenna sites is normally less than one mile apart. The exact distance required between cell antenna sites is determined by terrain, blockage from structures, call volume and antenna height.

How does a wireless antenna work and what is its function?

Wireless antennas send and receive radio signals. The RF carries the phone call to or from a wireless base station antenna that then connects your phone with the phone you are calling or with the phone calling you. Engineers carefully design each antenna to make sure it sends signals in precisely the right direction and at the right power level to provide the best calling quality to its coverage zone or "cell area." It is important to note the difference between antennas, towers and base stations. Antennas transmit the RF and are attached to structures such as buildings or towers. The antennas, towers and all of the related equipment make up a cell site.

Cells, or coverage areas, come in all sizes – they may be as small as a single building (like an airport or an arena), as large as a rural area of 20 miles across, or any size in between – and each cell has its own base station.

When you place a wireless call, your phone uses low-power radio signals to send your voice to an antenna at a base station. The base station sends your call to a switching center where it is connected to the landline phone network and delivered to the phone you called. If you are calling another wireless phone nearby, the switch might just connect you directly to another base station in the cell where the other phone is located. When you approach the boundary of one cell while using your wireless phone, the wireless network senses that the signal is becoming weak and automatically hands off the call to a base station in the next cell and your call continues uninterrupted.

An antenna distributes radio waves throughout its cell much like a lamp distributes light throughout a room. A light bulb can provide light evenly throughout a room if it's located in the right place. In the same way, a properly located antenna can provide high-quality calling throughout its cell. That's why they're usually found above the ground on towers, poles, and buildings.

Apart from improving service to T-Mobile's existing customer base, T-Mobile has experienced phenomenal growth in the last few years, with an average national customer growth rate of almost 40% per year. It is not unusual for T-Mobile to add more than a million nationwide customers per quarter. T-Mobile forecasts this phenomenal growth to continue. T-Mobile's system design accounts for this predicted growth.

I hope this information is useful to the County's permitting authorities. If there are any questions regarding the RF data provided in this report, please call. I may be reached at 313-655-0509.

Sincerely,

A handwritten signature in black ink, appearing to read "Kevin S. Durning", with a long horizontal flourish extending to the right.

Kevin S. Durning
Lead Design Engineer-Nexius
On behalf of T-Mobile

ATTACHMENTS

Attachment 1A and 1B, existing and proposed coverage plots

T-Mobile USA
Existing Coverage
(Bellevue 140th)

	Existing Site
	Proposed Site
	New Coverage - Indoor
	New Coverage - In Vehicle
	Existing Coverage - Indoor
	Existing Coverage - In Vehicle
	Poor to No Coverage

SE02475D



T-Mobile USA
Proposed Coverage
(Bellevue 140th)

-  Existing Site
-  Proposed Site
-  New Coverage - Indoor
-  New Coverage - In Vehicle
-  Existing Coverage - Indoor
-  Existing Coverage - In Vehicle
-  Poor to No Coverage

SE02475D

