

Exhibit L

of

PZC Case 2011-104 Issue-Response

Assembly Committee Document 7.7: Proposed Section 21.07.130C., Tall Buildings (September 9, 2010)

Note: This document was discussed at the September 9, 2010 Assembly Title 21 Committee meeting. It is provided as background information to page 38 of the Issue-Response memorandum for Chapters 5 and 6.

(Handwritten notes on this document are staff notes taken during the Committee discussion on 9-9-2010.)

Assembly Committee Document

7.7

September 9, 2010

Proposed Section 21.07.130C., Tall Buildings, supporting bonus incentives in Chapter 21.04, and supporting provisions of the Title 21 Users Guide. This document amends and replaces Assembly Document 7.5.B dated July 1, 2010, and also includes the following reference information:

- Heights of some local tall buildings page 8
- Expert interview notes re wind pages 9-10
- Building shadowing illustration page 11

Insert the following into the reserved Tall Buildings subsection (p. 417, lines 10-11) of Section 21.07.130.:

C. Tall Buildings

This section addresses the effects of tall buildings in Alaska's northern climate, including wind downdraft impacts on pedestrian comfort and safety, and shadowing impacts on sunlight access to neighboring properties. ~~SUNLIGHT SHADOWING IMPACTS ON THE SURROUNDING COMMUNITY.~~

1. Wind

Buildings that exceed 75 feet in building height (as measured in section 21.06.030D), including additions or modifications to the exterior building envelope, shall be designed so that wind speeds on sidewalks, walkways, and other pedestrian spaces surrounding the building will remain within thresholds for outdoor comfort and safety, or at least not add to existing wind problems.

a. Wind Speed Criteria

Acceptable wind speed thresholds for outdoor comfort and safety shall be specified in the Title 21 users guide, and based on the types of pedestrian activity anticipated to occur around the proposed building.

b. Method for Determining Wind Conditions

A wind study by a wind engineering/building aerodynamics expert shall be used to forecast wind conditions and present wind control measures or design modifications as necessary to demonstrate that wind speeds will remain within the accepted thresholds.

c. Incentives for Wind Mitigation¹

Any development that incorporates a wind tunnel test and the wind speed criteria of this section into the design of a multistory building shall be eligible for a floor area bonus as provided in sections 21.04.020J.2.c and 21.04.020G.2.b.

~~[WAIVER FOR SPECIAL CONTEXTS] (DELETED)²~~

¹ This new subsection c. is based on discussion by the Assembly Committee, which lent its support to the concept on July 1. Supporting amendments to the FAR incentive menus of Chapter 21.04 are provided on page 3, lines 20 – 28.

² Subsection c., Waiver for Special Contexts, which was introduced for public discussion in the previous draft (Assembly Document 7.5.B.), is no longer recommended for consideration, based on expert interviews and written comments documented on page 9 below.

1 2. **Sunlight Access**~~[SHADOWING]~~

2 The placement, height, bulk, and orientation of buildings that exceed 75 feet in building
3 height (as measured in section 21.06.030D.), including additions or modifications to the
4 exterior building envelope, shall ~~[BE PLACED AND DESIGNED TO]~~ minimize shading of
5 residences, schools, parks, and community gardens, as provided below. ~~[THE~~
6 ~~FOLLOWING USE TYPES DEEMED SENSITIVE TO SUNLIGHT SHADOWING: RESIDENTIAL~~
7 ~~USES AND LOTS IN A RESIDENTIAL OR RO DISTRICT; ELEMENTARY, MIDDLE AND HIGH~~
8 ~~SCHOOLS IN THE PLI DISTRICT; HEALTH CARE FACILITIES IN THE PLI DISTRICT; PUBLIC~~
9 ~~PARKS, COMMUNITY GARDENS, BOTANICAL GARDENS, AND COMMERCIAL~~
10 ~~HORTICULTURE.]~~ The sunlight access criteria are designed to protect the health and
11 welfare of occupants, the economic value of solar radiation, and options for future use of
12 solar energy.

13
14 a. **Sunlight Access Criteria**³

15 ~~[ACCEPTABLE THRESHOLDS OF SUNLIGHT SHADOWING FOR THE USE~~
16 ~~TYPES LISTED ABOVE SHALL BE SPECIFIED IN THE TITLE 21 USERS~~
17 ~~GUIDE.]~~ Applicable developments shall avoid casting shadows on the locations
18 provided in Table 21.07-14, for the time periods that the table specifies.

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*deal w/
topography
e.g. Peterson
Tower*
*developed
area*

Protected Use / Location	Period of Sunlight Access
Any point within the buildable area ⁴ of a lot in a residential or RO district	March 21, at least five hours between 9 am and 3 pm, solar time
Any point within a Community Garden	
Any point within a neighborhood, community, or specialty use area of a dedicated public Park	
Any point within the buildable area of a lot that is used for an Elementary, Middle or High School in PLI district	February 21, at least five hours between 9 am and 3 pm, solar time

30
31 b. **Method for Determining Shadowing Impacts**

32 The Title 21 users guide shall provide acceptable methods and procedures ~~[A~~
33 ~~SHADOW IMPACT ANALYSIS STUDY BY A QUALIFIED SHADOW~~
34 ~~ANALYSIS EXPERT SUCH AS A REGISTERED ARCHITECT OR~~
35 ~~LANDSCAPE ARCHITECT SHALL BE USED]~~ to forecast the spatial extent
36 and hourly time periods of shadowing, and present design modifications as
37 necessary to demonstrate that the sunlight shadowing will remain within the
38 accepted thresholds.

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39 **Incentives for Shadow Mitigation**⁵

40 Floor area incentives for minimizing shadowing through building placement and
41 design are available in sections 21.04.020J.2.c and 21.04.020G.2.b.

³ Sunlight access criteria including the table have been simplified and moved from the draft Users Guide to the Title 21 code, as requested by the Assembly Committee on July 1. Staff proposes limiting protections to just the most sensitive, vulnerable, high-priority uses. The portion of the residential or school lot to be protected has been reduced to the critical areas, in response to concerns raised on July 1.

⁴ Supporting amendment to define the term “buildable area” is provided below on page 3, lines 32 – 40.

⁵ Supporting amendments to the FAR incentive menus of Chapter 21.04 are provided on pages 9 and 10 of the Proposed Amendments to Provisionally-Adopted Title 21, dated May 20, 2010.

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3. **Exceptions**

The Director may allow wind speeds to exceed accepted thresholds for comfort, and/or allow shadowing beyond the accepted minimum thresholds for sunlight access, if:

- a. The building avoids worsening pre-existing conditions;
- b. The impact will be insubstantial because of the limited location or time period in which the wind speed or sunlight shadowing threshold is exceeded; or
- c. It has been demonstrated that the proposed development conforms to the maximum extent feasible.

In support of the proposed amendment above on page 1, lines 40-43 of this document, add the following menu item at the end of the menus of floor area bonuses located in Chapter 21.04, subsections 21.04.020J.2.c. (p. 113, after line 26) and 21.04.050G.2.b. (p. 123, after line 15):

Bonus for Wind Mitigation

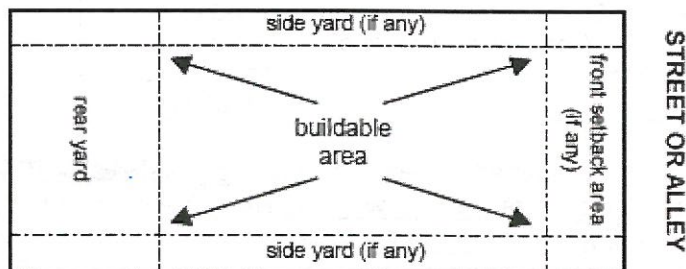
A floor area bonus equal to ten percent of the lot area (0.10 FAR) but in no case to exceed 10,000 square feet is allowed if a wind tunnel test and the wind speed criteria meeting the specifications of section 21.07.130C. are incorporated into the design of a multistory building development to improve microclimatic conditions.

In support of the proposed term “buildable area” on page 2, Table 21-14 of this document, add the following term and definition to section 21.14.030, Definitions:

Buildable Area

The area of a lot remaining after the minimum setback and site perimeter landscaping requirements of this title have been met, including any required setbacks from utility transmission facilities, projected rights-of-way, streams, water bodies, or wetlands. The buildable area of a lot shall exclude floodways, class A wetlands, utility easements, steep slopes and other areas of a lot that the regulations of this title deem unavailable for building construction. [ILLUSTRATE⁶]

⁶ Following is an example of a typical “buildable area” illustration in a zoning ordinance.



1 Title 21 Users Guide: Wind Comfort and Safety Criteria (DRAFT)

2
3 **Comfort**

4 Wind criteria for pedestrian comfort and safety are typically based on wind force (speed). To
5 capture the effects of both average winds and peak gust speeds in measuring pedestrian
6 comfort, measurements of wind speed use the *gust equivalent mean (GEM)* wind speed. GEM
7 is the hourly mean wind speed adjusted to incorporate the effects of gusts on pedestrians.
8 GEM is calculated as the greater of either (a) the mean speed, or (b) the gust speed divided by
9 a gust factor. Typically a gust factor of 1.85 is used for wind comfort measurement.

10
11 Wind speed thresholds for comfort vary depending on the type of pedestrian activity. Lower
12 wind speeds are needed in areas where people will sit, as compared with areas primarily for
13 walking through. Table 1 provides GEM wind speed ranges considered tolerable for three
14 categories of pedestrian activity: sitting, standing and walking.

15
16 Sitting: Wind speeds of 6 mph or less are appropriate for outdoor cafes or other spaces where
17 people will sit and relax or engage in other optional activities for extended periods of time (e.g.,
18 more than 10 or 15 minutes). At 0-6 mph, a light breeze may be felt, but a person can read a
19 newspaper without it blowing away.

20
21 Standing: Wind speeds of 9 mph or less are appropriate for people to comfortably stand for
22 awhile, or sit at a bench for short periods, such as waiting 10 minutes at a bus stop, or a bench
23 along a sidewalk, or a primary entrance to a building. At wind speeds of 9 mph, leaves will
24 rustle, however window shopping or lingering for limited periods should remain tolerable.

25
26 Walking: Wind speeds of up to 12 mph can lift leaves, move litter, disturb hair and make loose
27 clothing flap, but remain tolerable for walking on sidewalks, across intersections, or movement
28 in playing fields or other spaces where people will be active.

29
30 Uncomfortable: Wind speeds greater than 12 mph are considered as a nuisance or can be an
31 impediment for walking and other activities. Dust and loose paper is raised, hair is disarranged.

32
33 Probability of Exceedance. Because it is not reasonable to expect wind conditions in a location
34 to be comfortable 100% of the time, the wind comfort criteria in Table 1 employ the widely
35 accepted allowance for threshold wind speeds to be exceeded 20% of the time. For example,
36 as long as wind speeds in a location remain in the range of 0 – 6 mph for 80% or more of the
37 time, such location would be rated by the example criteria in Table 1 as comfortable for sitting.

Table 1. Acceptable Wind Speed Thresholds by Pedestrian Comfort and Safety Category				
Sitting	Standing	Walking	Uncomfortable	Hazard
GEM wind speeds of 0 – 6 mph for 80% or more of the time	GEM wind speeds of 0 – 9 mph for 80% or more of the time	GEM wind speed of 0 – 12 mph for 80% or more of the time	GEM wind speed exceeds 12 mph for more than 20% of the time	Gust speeds of 55+ mph > two events annually

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39
40 The wind engineering/building aerodynamics expert may propose [REQUEST] departures from
41 the wind speed thresholds, other (alternative) wind speed threshold criteria, and/or different
42 categories of pedestrian activity from those above, based on specific conditions or
43 documentation of such departures and alternatives supported by the ASCE. The criteria in
44 Table 1 are also intended to be flexible enough to allow for interpretations by experts and staff.

1 **Wind Safety**

2 The last column of Table 1 addresses the wind safety category. Winds or wind gusts that are
3 strong enough to blow people over are considered a safety hazard. Sources classify wind
4 speeds above 45 mph as a strong gale, enough to blow people over depending on a variety of
5 factors. Gust speeds in excess of 55 mph are “whole gale” speeds, and have a greater
6 potential to take a person off footing or balance. If such gust speeds exceed occur more than
7 two times per year, then the chance of someone being injured becomes unacceptably high,
8 according to the ASCE report *Outdoor Human Comfort and Its Assessment*.

9
10 **Wind Chill**

11 The wind comfort threshold criteria measure only wind *force*. An evaluation of thermal effects
12 would be more complex. For this reason, wind studies are not required to address the potential
13 thermal effects on pedestrian comfort in the winter. However, on colder winter days, it is
14 expected that wind chill will reduce people’s tolerance of wind. Literature warns that any
15 increase in winter winds can have a negative impact on outdoor activity. One source suggests
16 that the relative wind comfort rating for any given location may shift by one comfort category to
17 the right on Table 1 for each subtraction of 40 degrees from a starting temperature of 50
18 degrees Fahrenheit. Therefore, designers and review bodies are encouraged to seek that
19 winter wind speeds will, to the maximum extent feasible, remain within the wind speed
20 thresholds established in Table 1.

21
22 **Determining Local Wind Conditions**

23 Long-term wind statistics from the nearest airport (e.g., International Airport, Elmendorf), or
24 another nearby first order weather station with reliable historical wind records, must be used to
25 predict the frequency distribution of mean wind speeds for each wind direction. Because
26 prevailing winds differ seasonally, statistics need to be separated into summer and winter
27 seasonal data.

28
29 The wind expert preparing a wind study may be able to estimate wind conditions around the
30 proposed building by conducting a *screening-level wind assessment*. Unlike a full-blown *wind*
31 *tunnel test*, a *screening-level assessment* is based on the wind consultant’s knowledge and
32 experience with the assistance of software programs that estimate potential wind comfort
33 conditions around a generalized building form. The *screening-level wind assessment* may be
34 able to conclude that conditions around the building will remain within comfort and safety
35 thresholds.

36
37 However, if the assessment cannot clearly indicate wind speeds will remain within the comfort
38 or safety criteria, or if it suggests that conceptual wind control measures or changes to the
39 building shape may be needed, then the wind study should progress to a *wind tunnel test* using
40 a scale model of the proposed building and all relevant surrounding structures and topography.

41
42 Model scale, the extent of area modeled and wind tunnel test methods shall follow the ASCE
43 *Manual of Practice for Wind Tunnel Studies of Buildings and Structures*. In order to determine
44 the potential impact of development (i.e., new buildings or additions), a test of the existing site
45 conditions shall also be conducted to establish base wind conditions for comparison.

46
47 The selection of wind speed sensor locations around the model building are chosen by the wind
48 expert in consultation with the building design team and municipal staff, and should reflect the
49 location of anticipated pedestrian activities (sitting, standing, and/or walking) near the building.

1 Table 2 is an example of an acceptable presentation of a wind study’s predictions for wind
 2 conditions. It provides comfort/safety ratings for each location around the building, in summer
 3 and winter.
 4

Table 2. Wind Study Results (Hypothetical Example)

Location	Season	Comfort Category				Hazard Category		
		Sitting	Standing	Walking	Uncomfortable	Rating	Events	Rating
1	Summer	70	80	90	10	<i>Standing</i>	0	Meets
	Winter	50	70	80	20	<i>Walking</i>	1	Meets
2	Summer	75	85	90	10	<i>Standing</i>	2	Meets
	Winter	40	60	70	30	<i>Unconf.</i>	4	Exceeds

5
 6
 7 For the purpose of establishing prevailing winds, summer season should be defined as May –
 8 October, and winter season as November – April. Prevailing winds for the time period outside
 9 of “normal” hours of activity (i.e., between Midnight and 5 a.m.) may be excluded from the
 10 analysis.
 11

12 **Areas around the Proposed Building to be Used for each Category of Pedestrian Activity**

13 This section of the Users Guide explains how to determine which areas around the proposed
 14 building are anticipated to be used for each category of pedestrian activity—i.e., sitting,
 15 standing, or walking. Anticipated wind conditions for any given area around a proposed building
 16 need to be rated as comfortable for a particular category of activity only if that particular activity
 17 is anticipated to occur in the given area. For example, forecasted wind conditions in a specific
 18 space need to be comfortable for sitting only if that area is anticipated to be a plaza, outdoor
 19 restaurant, or other space designed for sitting for extended periods of time.

20
 21 The applicant shall, with municipal staff review, identify which areas around the building will
 22 have pedestrian activity, and the which categories of pedestrian activity (e.g., sitting, standing,
 23 walking) are anticipated to occur in such areas. The proposed site plan layout, municipal plans
 24 and policies for the area, existing and planned improvements on public rights of way, existing
 25 and planned activities on adjacent lots, and other sources should be consulted to determine
 26 future levels and categories of pedestrian activity.

27
 28 **[WAIVER FOR SPECIAL CONTEXTS]**
 29 ~~PURSUANT TO SUBSECTION 21.07.130C.1.C. OF TITLE 21, THIS PART OF THE USERS~~
 30 ~~GUIDE EXPLAINS HOW TO DETERMINE WHETHER A WAIVER IS APPROPRIATE, AS~~
 31 ~~WELL AS THE METHOD FOR DETERMINING PREVAILING WIND DIRECTIONS AND~~
 32 ~~PREDOMINANT HEIGHTS OF SURROUNDING BUILDINGS / TOPOGRAPHY. [TBD]~~

33
 34 **Date and Description of Design Drawings Reviewed**

35 The applicant shall provide the date of the draft building design plans which were subjected to
 36 the screening level wind assessment and any wind tunnel testing, and include photographs of
 37 the building(s) tested. If different building design scenarios
 38

**Title 21 Users Guide:
Acceptable Thresholds of Sunlight Shadowing by High Rise Buildings (DRAFT)**

This section of the Title 21 users guide provides acceptable methods and procedures for forecasting the shadowing impacts of a proposed development. (TBD) [THRESHOLDS FOR THE MINIMUM AMOUNT OF SUNLIGHT ACCESS ACCEPTABLE FOR SPECIFIED USES CONSIDERED ESPECIALLY SENSITIVE TO SUNLIGHT SHADOWING IN ALASKA'S CLIMATE. THESE THRESHOLDS ARE INTENDED TO APPLY TO THE REVIEW OF PROPOSED HIGH RISE BUILDINGS.]

Because Alaska's low sun angles in the winter make it unreasonable to insist on sunlight access year-round, the sunlight access thresholds below focus on spring, summer and fall. During those seasons the sun's altitude is higher, allowing for buildings to be located nearer to one another in an urban setting without necessarily having to shade each other all day. Sunlight access becomes particularly important during spring and fall, when the angle of the sun can yield substantial solar radiation to buildings and outdoor spaces, making sunlight access a key factor determining in thermal comfort and usability.

[THE ACCEPTABLE EXTENT OF SUNLIGHT SHADOWING MAY VARY DEPENDING ON THE AFFECTED LOCATION OR USE TYPE. TABLE 3 BELOW SPECIFIES MINIMUM SUNLIGHT ACCESS CONSIDERED ACCEPTABLE FOR A VARIETY OF USES DEFINED IN TITLE 21. THESE MINIMUM SPECIFICATIONS APPLY TO THE ENTIRE PROPERTY OR DEVELOPED AREA OF THE PROPERTY BEING UTILIZED BY THE USE. EXCEPTIONS MAY BE GRANTED PURSUANT TO THE TITLE 21 PROVISIONS FOR HIGH RISES IN AMC 21.07.130C.3.]

[TBD. THE MINIMUM SUNLIGHT ACCESS CRITERIA IN THE MIDDLE COLUMN OF THE TABLE BELOW ARE EXPRESSED AS A PERFORMANCE GOAL FOR THE AMOUNT OF SUNSHINE NEEDED BY THE PROTECTED USES. THIS SECTION NEEDS TO FURTHER EXPLAIN THE METHOD BY WHICH TO MEASURE COMPLIANCE FOR A PROPOSED TALL BUILDING NEAR THE PROTECTED USE. THE METHOD WILL CLARIFY THAT THE PERFORMANCE STANDARD APPLIES ONLY TO THE PROPOSED BUILDING, AND NOT INCLUDE CUMULATIVE SHADOW EFFECTS OF OTHER EXISTING BUILDINGS. IT WILL CLARIFY THAT THE APPLICANT WILL NOT BE PENALIZED FOR SHADOWING CAUSED BY EXISTING BUILDINGS ON NEIGHBORING LOTS.]

TABLE 3: ACCEPTABLE SUNLIGHT SHADOWING BY TYPE OF AFFECTED USE		
USE OR LOCATION	MINIMUM SUNLIGHT ACCESS (PERFORMANCE GOAL FOR THE AMOUNT OF SUNLIGHT NEEDED BY THE USE)	DAYLIGHT PLANE ANGLE
RESIDENTIAL USE OR A LOT IN A RESIDENTIAL DISTRICT EXCEPT R-4 OR R-4A	EIGHT HOURS ON MAR / SEPT 21	MAXIMUM OF 1 FOOT OF RISE FOR EVERY 2 FEET OF RUN
RESIDENTIAL USE OR A LOT IN THE R-4, R-4A OR R0 DISTRICT	SIX HOURS ON SEPT / MAR 21	MAXIMUM OF 3 FEET OF RISE FOR EVERY 5 FEET OF RUN
ELEMENTARY, MIDDLE OR HIGH SCHOOL IN THE PLI DISTRICT	9 AM TO 3 PM (SOLAR TIME) ON FEB / OCT 21	MAXIMUM OF 1 FEET OF RISE FOR EVERY 2 FEET OF RUN
HEALTH CARE FACILITIES IN THE PLI DISTRICT	SIX HOURS ON SEPT / MAR 21	MAXIMUM OF 3 FEET OF RISE FOR EVERY 5 FEET OF RUN
PUBLIC PARKS	SIX HOURS ON SEPT / MAR 21	N/A
COMMUNITY GARDENS		
BOTANICAL GARDENS		
COMMERCIAL HORTICULTURE		

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Research Notes re: Tall Building Height

4 IBC Section 403 defines a high rise as a building with an occupied floor located more than 75 feet above the
5 lowest level of fire department vehicle access. This definition uses the floor height rather than actual height of
6 building mass, because the IBC is concerned with fire safety and emergency access requirements. The IBC
7 definition does not necessarily directly relate to the actual height and bulk of the exterior building mass, and
8 therefore does not accurately predict shadowing and wind effects.

9
10 Title 21 defines "building height" in chapter 21.14 (p.611), and establishes its measurement in 21.06.030D.
11 This definition applies where ever the code uses the term "building height", for example on page 391, line 9.

12
13
Example Building Heights Relative to a >75 Foot Threshold for Requiring Wind Studies

Building	Location (cross streets)	Building Height ⁷ (feet / stories)	Subject to a wind study?
1. Afognak Corporation	40 th and Arctic Blvd.	62 feet / 5 stories	No
2. Centerpoint North	C Street south of 36th	64 feet / 5 stories	No
3. Credit Union 1	near 88 th and Abbott	67 feet / 5 stories	No
4. Key Bank	Northern Lights and C	68 feet / 5 stories	No
5. Woronzof Tower	at Spenard and Fireweed	72 feet (est.) / 7 stories	Probably No
6. Wells Fargo (formerly NBA)	Northern Lights and C	82 feet / 6 stories	YES
7. Dena'ina Convention Center	7 th Ave. between F and G	99 feet / 3 stories ⁸	YES
8. ASRC at Centerpoint	corner of 40 th and C	100 feet / 10 stories	YES
9. Centerpoint West	Centerpoint Dr. near 36th	110 feet / 8 stories	YES
10. Centerpoint Tower <i>(not including the penthouse)</i>	Centerpoint Dr. near 40 th	173 feet / 14 stories	YES

14
⁷ Building height measurement in feet is approximate, and in most cases based on MOA Property Appraisal data regarding the height of each floor in the building. The measurement of building height in this table and in Title 21 does not include penthouses, unless the penthouse occupies more than one-third of the building's roof area. Penthouses occupy less than 1/3 of the roof area of all of the examples above except for Centerpoint Tower.

⁸ The Convention Center's highest occupied floor (its third floor) is located approximately 52 feet above the lowest level of fire department vehicle access, and therefore the IBC definition of "high rise" would not apply to the Convention Center. Yet the building is approximately 99 feet tall because the third floor main room ceiling height is 47 feet. This is an example of how poorly the IBC definition of "high rise" predicts the actual building height, relative to the need for a wind and shadow analysis.

Research Notes re: Interview with Wind Studies Expert

Source: Bill Waechter and Roman Stangl, RWDI, expert interview with municipal staff, July 10, 2010

1. At what height do buildings in downtown and midtown create wind problems?

The proposed height threshold of 75 feet is a good starting point to use as a flag for potential wind issues. Anchorage is such that there are no typical sites or rules of thumb. In many cases, the wind expert will say (in his/her screening-level wind assessment) that there won't be wind issues, and therefore there is no need for a full-blown wind tunnel test on the proposed building. The way the draft is written leaves the decision making about the appropriate level of study to the experts, which is better than municipal staff.

2. What is a ball-park cost of a screening level wind assessment and a wind tunnel test.

A screening level assessment might be in the range of \$6,000 to \$10,000. (Staff did not clarify wind tunnel test cost however experience with Augustine Energy Center suggests that a wind tunnel test might be around \$30,000.)

Although there are costs to conducting wind studies, the builder (owner) is likely to get a better building out of the wind study process.

3. How specific should be the language in the draft "Waiver for Special Context" that was proposed in Assembly Committee Document 7.5.B. (dated July 1, 2010)?

The proposed waiver is problematic. It creates too many "what ifs" and assumes there are rules of thumb regarding height, width and building spacing relationships. (Based on our decades of experience here,) Anchorage is such that there are no typical sites. There are no rules of thumb for wind impacts based on building height in relation to distances to surrounding buildings. The draft waiver would put the Planning Department in the position of having to be a wind expert—deciding whether or not there are likely to be wind impacts without the benefit of a site specific wind study.

There should not be a waiver of whether or not to require a wind study, other than the 75 foot height threshold below which any building is exempt. Instead, the "waiver" should be in terms of what level of wind study to require. Leave this decision to the experts.

The context-based waiver describes a specific situation that would be rather rare (the exception rather than the norm) in most parts of Anchorage.

It is difficult to write a waiver to cover all situations. For example, the draft waiver as written depends on the height of surrounding buildings located in the direction of prevailing winds within 200 feet of the proposed building. But "prevailing winds" does not cover the 20+ MPH winds that create hazards (see Figure 1 from the Augustine Energy Center wind study). In other words, a building that is eligible for the draft waiver could still produce hazardous wind speeds.

Another example would be the Dena'ina Convention Center, where a tall building to the ^{north} ~~south~~ of the Convention Center (where City Hall parking lot is today) would result in an exemption for the Convention Center (this is not totally hypothetical as it was considered a potential mixed-use hotel building site in the Downtown Comprehensive Plan and according to understanding of staff by the owner). As written, the waiver would have exempted the Convention Center if a tall building (e.g., the potential hotel) had been to the south of it, even though such tall building (hotel) would not have alleviated the increased winds created by the juxtaposition of the Convention Center and Conoco-Phillips building.

1
2 4. Comments regarding the draft Users Guide
3

4 Leave some kind of wiggle room in the wind speed thresholds for each category of pedestrian activity.
5 For example, in Table 1, it can be ok if GEM wind speeds of 0 – 6 mph are maintained for only 79%
6 of the time (rather than the minimum of 80% of the time). 79% should not necessarily mean the
7 proposed building should fail its test and be redesigned. A difference of 1% is not something
8 noticeable to most people. Avoid staff from becoming too focused on detail, or specific numbers in
9 the threshold criteria.

10
11 Allow for departures from the threshold criteria in Table 1, based on accepted practices in the field.
12 There are other criteria out there that an expert might propose.

13
14 Allow for interpretations in the criteria by experts and staff, depending on the situation.

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16
17 Wind tunnel tests need a certain minimum sized scale to be able to model wind flows correctly, such
18 as around a canopy. This is why the wind tunnel test should follow ASCE manual of practice. In
19 addition, the wind study report should include the date of the building design drawings reviewed for
20 the study, and maybe include some of the drawings or photos of the building models tested. The
21 reason is that there have been cases when, inadvertently, the draft building design given to the wind
22 study expert isn't the same as the draft building design submitted to the city—because the building
23 design is undergoing an iterative development process.
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