



Memorandum

To: Office of Planning, Department of Energy and Environment, Department of Transportation

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Date: June 23, 2017

Subject: Case Number 17-05
2100 2nd Street SW
Design Review in CG-5 Zone

Per DOEE's recommendation design team investigated two options proposed by DOEE for flood mitigation:

Option 1: elevating existing non-residential first floor to the base flood elevation (BFE) of 10.6 ft +1.5 ft=12.1 NAVD88 or 12.2' DC Datum

Option 2: elevating existing non-residential first floor to the 500-year floodplain 14.1' NAVD88 or 14.2' DC Datum

Top of the existing first floor slab is located at elevation of 9.95' (DC Datum). To comply with Option 1, first floor would need to be raised by 2 ft 3 in. The existing site's topography varies from North (V Street) to South (waterfront) with high point being at approximately elevation 10' (DC Datum) on V Street sidewalk and sloping gradually towards the waterfront with low point at elevation 6.8' (DC Datum) at Southwest and Southeast corners of the building. Thus vertical drop from North to South is roughly 3 ft.

To comply with Option 1 of elevating first floor to 12.2' (DC Datum) and taking site topography into account, top of elevated floor would be 2 ft 3 in above the sidewalk on high point of the site (V Street), and 5 ft 4 in above the sidewalk at low point at the edge of Southwest (end of 2nd Street) and Southeast (end of 1st Street) corners. This condition will require provision of ramps and steps within public space to allow access into retail, restaurants and residential entries around the perimeter of the site. In addition, due to the drop in topography from North to South retail storefront will be located above eye level for restaurants located at the South end of the site making it a less friendly pedestrian experience which will also decrease retail's viability in this location.

Per code at least 60% of all public entries (IBC 2012, Chapter 11, §1105.1) need to be accessible. Maximum allowed slope for an accessible ramp is 1:12 (2010 ADA Standards, §405.2 Ramp Slope). In addition, the rise for any ramp cannot exceed 30 inches in rise without having an intermediate landing (2010 ADA Standards, §405.5 Rise). With these considerations in mind it would take an estimated 553 linear feet of ramps and landings in order to provide code compliant accessible entries into the building if the first floor were to be raised to 12.2' (DC Datum) per Option 1. This is more than half (62%) of the total street perimeter around the site (Table 1).

To comply with proposed Option 2, first floor would need to be raised by 4 ft 3 inches (additional 2 ft higher than Option 1). Using the same method of calculating linear feet of ramp it would take 809 linear feet of ramp or an estimated 92% of total street perimeter if the floor were to be elevated to 500-year floodplain (Table 2). The same concerns with location of storefronts at and above eye level, the ability of pedestrians to see through storefront windows and potential viability of the retail spaces, are even more prevalent if the first floor were to be raised up to 500-year floodplain.

Location of retail access and storefronts at street level reinforce pedestrian friendly experience and help promote viability of those retail spaces by making it easy to access especially in a currently underdeveloped neighborhood.

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Elevating entries and storefronts by 2 to 7 feet above the sidewalk would not be conducive to future retail development in this location while neighborhood is in its early stages of development and is not yet the destination point that it will become.

TABLE 1 - River Point - 2100 2nd Street SW

An estimated amount of linear feet of ramp and landings needed for accessible entries, if existing first floor is elevated to 12.2' el. **(100-year flood + 1.5' of freeboard)** per DC Datum.

Entry No.	Location	Elevated Floor (ft)	Grade (ft)	Height (ft)	Ramp Length (ft)	Intermediate Landing (ft) when ramp length>30'	Top Landing at Entry (ft)	Total Ramp (ft)	Total Street Perimeter (ft)
1	Retail B - primary entry - V St	12.2	9.52	2.68	32.16	5	9	46.16	883
3	Residential - Elevator & Egress Stair - V St	12.2	9.77	2.43	29.16	0	16	45.16	
5	Retail C - primary entry - V St	12.2	10.02	2.18	26.16	0	16	42.16	
6	Retail D - primary entry - V St	12.2	10.03	2.17	26.04	0	16	42.04	
8	Retail Elevator lobby to P1 - 2nd St	12.2	9.04	3.16	37.92	5	17	59.92	
16	Restaurant - R3 main entry - 2nd St	12.2	7.14	5.06	60.72	5	12	77.72	
21	Restaurant - R1 main entry - 1st St	12.2	7.15	5.05	60.6	5	20	85.6	
24	Fire Pump Rm, FCC Rm, Main Residential Lobby - 1st St	12.2	8.35	3.85	46.2	5	40	91.2	
26	Reatil A - primary entry - 1st St	12.2	8.67	3.53	42.36	5	16	63.36	
Total Ramp & Landings:								553.32	
Total Ramp (Percentage of Total Street Perimeter): (1 st Street, 2 nd Street, V Street)								63%	

Note: for entry number locations please refer to page F10 dated June 23, 2017 from Flood Protection Appendix.

TABLE 2 - River Point - 2100 2nd Street SW

An estimated amount of linear feet of ramp and landings needed for accessible entries, if existing first floor is elevated to 14.2' el. **(500-year flood)** per DC Datum.

Entry No.	Location	Elevated Floor (ft)	Grade (ft)	Height (ft)	Ramp Length (ft)	Intermediate Landing (ft) when ramp length >30'	Top Landing at Entry (ft)	Total Ramp (ft)	Total Street Perimeter (ft)
1	Retail B - primary entry - V St	14.2	9.52	4.68	56.16	5	9	70.16	883
3	Residential - Elevator & Egress Stair - V St	14.2	9.77	4.43	53.16	5	16	74.16	
5	Retail C - primary entry - V St	14.2	10.02	4.18	50.16	5	16	71.16	
6	Retail D - primary entry - V St	14.2	10.03	4.17	50.04	5	16	71.04	
8	Retail Elevator lobby to P1 - 2nd St	14.2	9.04	5.16	61.92	10	17	88.92	
16	Restaurant - R3 main entry - 2nd St	14.2	7.14	7.06	84.72	10	12	106.72	
21	Restaurant - R1 main entry - 1st St	14.2	7.15	7.05	84.6	10	20	114.6	
24	Fire Pump Rm, FCC Rm, Main Residential Lobby - 1st St	14.2	8.35	5.85	70.2	10	40	120.2	
26	Reatil A - primary entry - 1st St	14.2	8.67	5.53	66.36	10	16	92.36	
Total Ramp & Landings:								809.32	
Total Ramp (Percentage of Total Street Perimeter): (1 st Street, 2 nd Street, V Street)								92%	

Note: for entry number locations please refer to page F10 dated June 23, 2017 from Flood Protection Appendix