

**Public Hearing 2020-Jul-09 - 1. CD-1 AMENDMENT: 2538 Birch Street (formerly 1296 West Broadway) (OPPOSED)**

Date Received	Time Created	Subject	Position	Content	Name	Organization	Contact Info	Neighbourhood	Attachment
07/09/2020	21:32	PH2 - 1. CD-1 AMENDMENT: 2538 Birch Street (formerly 1296 West Broadway)	Oppose	Hello, Thank you for the opportunity to speak. Attached are my comments. Kind regards, Peter Driessen	Peter Driessen		s.22(1) Personal and Confidential	Unknown	<a href="#">APPENDIX A</a>
07/09/2020	21:33	PH2 - 1. CD-1 AMENDMENT: 2538 Birch Street (formerly 1296 West Broadway)	Oppose	Dear City Clerk, Re: July 9, 2020 Public Hearing, CD-1 Amendment: 2538 Birch St. I am writing to submit a petition update containing 45 signatories who oppose the rezoning of 2538 Birch Street to accommodate a 28-storey building (Please find an Excel spreadsheet with full data attached). The petition can be found here: <a href="https://www.thepetitionsite.com/429/246/117/south-granville-stands-for-building-height-restriction/?z00m=31096243&amp;redirectID=2781372558">https://www.thepetitionsite.com/429/246/117/south-granville-stands-for-building-height-restriction/?z00m=31096243&amp;redirectID=2781372558</a> [thepetitionsite.com] Please confirm that you have received this petition, and ensure that these signatories are updated on the Council agenda webpage, and entered into the public record. Thank you for your assistance. Respectfully, Sean Nardi	SEAN NARDI			Unknown	<a href="#">APPENDIX B</a>
07/09/2020	23:04	PH2 - 1. CD-1 AMENDMENT: 2538 Birch Street (formerly 1296 West Broadway)	Oppose	Again....developers will be making profits. Has council learned anything about the private sector????!! Look at what has happened to seniors care.....profit for the shareholders and many, many deaths.....shame on you!!! Public housing should be at the forefront. I am tired of for profits making money of the backs of hard working people. Will those individuals working in non-union front line jobs be able to afford these units? Will these units be available to people working in the health care facilities close to this area? This tower is not about community....it reminds me of the properties in Toronto and in England.....estate towers. A community requires planning....not how to profit.....will this building allow for a mix of income, age, diversity?? Who will be living in this edifice???? ....and what amenities are close by..... how many people will be living here? Where will they go to get fresh air..... I think of these buildings as disease power towers.....be strong...take a stand and oppose this project. Maybe empty offices can be turned into housing!!!	YVONNE GROHMULLER			Kitsilano	No web attachments.
07/09/2020	23:34	PH2 - 1. CD-1 AMENDMENT: 2538 Birch Street (formerly 1296 West Broadway)	Oppose	You have to be kidding? Below market value suites?? I'll believe it when I see it besides it's only 58 households. What about the other thousand people who want in at below market value? Once again it's all about satisfying the rich developers. That's the only reason this is more than likely go through. I live and rent a few blocks from this location and I can barely afford my rent at \$1320 a month! And I'm a hard working , middle class guy making around \$55-56K. It's nice that all levels of government like to push the working class out of the city! I'm not surprised and would be shocked if this doesn't go through. What happens to the original plan of 15 stories? How did the developer magically convince the city to double the size and occupancy?? Maybe a question for city council. Very disappointed all levels of government support this! It's all about the revenue the city gets NOTHING to do with the average citizen.	No Name No Name (ps)			Fairview	No web attachments.
07/09/2020	23:40	PH2 - 1. CD-1 AMENDMENT: 2538 Birch Street (formerly 1296 West Broadway)	Oppose	I live in the Fairview neighbourhood and I oppose the 28-storey rezoning proposed for 2538 Birch Street.	Matthew Clifford-Rashotte			Fairview	No web attachments.
07/10/2020	07:43	PH2 - 1. CD-1 AMENDMENT: 2538 Birch Street (formerly 1296 West Broadway)	Oppose	I live in Vancouver and I oppose the 28-storey rezoning proposed for 2538 Birch Street.	Katherine Evans			Fairview	No web attachments.

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07/10/2020	07:45	PH2 - 1. CD-1 AMENDMENT: 2538 Birch Street (formerly 1296 West Broadway)	Oppose	I am no longer able to speak on this issue due to the timing change so will send these comments. I strongly oppose the proposed 12-story increase to this previously approved 16 floor building. Working with marginalized people living with substance abuse and mental health concerns, I certainly need the need for affordable rental housing in Vancouver. That said, I walk around this neighbourhood and see dozens of construction sites with proposed high rises going in in the next year or two. There are six projects just within a 3-4 block radius of this one with heights of 16 floors, 18 floors and so on. Density, noise and traffic will increase in this area substantially over the next couple of years. This rapid increase, along with this proposed 28 story building, is way out of scale for this neighbourhood. It's too much increased density, too soon, without a clearly articulated plan to managed increase pressures on public resources. I urge council not to approve this 12th floor increase from the originally approved proposal. Thank you.	Sarah			Fairview	No web attachments.
07/10/2020	08:30	PH2 - 1. CD-1 AMENDMENT: 2538 Birch Street (formerly 1296 West Broadway)	Oppose	Re Development 1296 West Broadway We, the undersigned, have lived in this area of the City for 28 years. We oppose the rezoning proposed for Birch Street and West Broadway ? 16 floors yes, 28 floors, NO. A & P Morison	A & P Morison			Unknown	No web attachments.
07/10/2020	08:45	PH2 - 1. CD-1 AMENDMENT: 2538 Birch Street (formerly 1296 West Broadway)	Oppose	Too big: an additional 12 storeys for a measly 20% moderate income rental units is not good math. Why does council continue to approve spot zoning rather than waiting for the city plan? A city is more than just housing. It has to include schools, community centres, parks and realistic traffic impacts.	Andrea Baxendale			Fairview	No web attachments.
07/10/2020	09:10	PH2 - 1. CD-1 AMENDMENT: 2538 Birch Street (formerly 1296 West Broadway)	Oppose	City Council should not approve the addition of 12 floors to the original proposal. Doing so would encourage the owners of many three and four storey rental buildings in the neighbourhood to sell to developers who would demolish them in favour of much higher buildings; and those would be condominiums, not rental suites. As a renter nearby this address, I am deeply concerned about the loss of rental housing stock. The City must not approve this "bait and switch" proposal from the developer.	Gordon Yusko	None -- I am not affiliated with any organization.		Fairview	No web attachments.
07/10/2020	09:40	PH2 - 1. CD-1 AMENDMENT: 2538 Birch Street (formerly 1296 West Broadway)	Oppose	I think it is very important to find ways to house everyone but this is not it. Aside from the precedent it will set this type of building only exacerbates the alienation documented in Vancouver.	Lynn Copeland			Kitsilano	No web attachments.

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07/10/2020	10:26	PH2 - 1. CD-1 AMENDMENT: 2538 Birch Street (formerly 1296 West Broadway)	Oppose	Dear Council, I am a resident of the Fairview slopes neighbourhood and live a couple of blocks away from the proposed build. I have a couple of concerns with the proposed building: 1. The size - this is 65% larger than other buildings in the area, and although I support the need to build up as we run out of space in the city (especially for moderate-income units), this is much larger than the surrounding area and will likely open the door for much larger builds in the future completely changing this neighbourhood. 2. Increase to traffic to the area - I am a local resident who bikes and the changes to Oak street have made it a lot safer to bike along 7th Ave. My concern would be to 10th Ave, a major east-west bike connector I use frequently. What traffic studies (inclusive of biking) have been done to support the increased building size? How will the city keep bikers safe? 3. City's flexible policy on FSR for new builds - I live in a building that is over 30 years old and had modifications made to it 2 years after being built that make it out of compliance with the City. Furthermore, the drawings on record with the City were not even the as-builts and some modifications to the original design reflected in the original construction are also non-compliant. Until maybe 5 years ago there were no issues. But during a building maintenance project, the City informed the Strata that we would need to change these non-compliant factors before being able to be issued permits to do maintenance work on the building in the future. They are related to a slightly elevated FSR (<10%). The proposed building is looking to have an FSR increase of nearly 50% from 7.07 to 10.55. This is really frustrating as a resident trying to maintain their building. The messaging appears to be when there is a new large development all the exceptions can be made for the project, but when there was something done over 30 years ago the city will bend over backward to make the Strata comply. Where is the logic? Fundamentally this project should not be approved, given how little common sense is applied to the current buildings in the neighbourhood out of compliance with FSR. Or the city should update the policy to forgive/allow non-compliant modifications older than 10 years, as these aren't new contractors trying to deceive the City, but residents living with issues related to poor record-keeping 30 years ago. Appreciate the consideration, Andrea A resident of Fairview Slopes	Andrea Bowie		s.22(1) Personal	Unknown	No web attachments.
07/10/2020	10:27	PH2 - 1. CD-1 AMENDMENT: 2538 Birch Street (formerly 1296 West Broadway)	Oppose	I, Carl Morin, living at s.22(1) in Fairview Slopes, Vancouver, strongly oppose the development of the 28 STOREY BUILDING at 2538 Birch Street CORNER of BROADWAY. This project was previously approved for 16 floors and therefore, would aesthetically fit in with the other buildings in this area. No buildings of over 16 floors should be erected in False Creek, Fairview Slopes, South Granville as this would create a very unwanted precedent. Thank you for your consideration, Yours truly Carl Morin	Carl Morin		s.22(1) Personal	Unknown	No web attachments.
07/10/2020	10:29	PH2 - 1. CD-1 AMENDMENT: 2538 Birch Street (formerly 1296 West Broadway)	Oppose	Good morning to all; I made oral submissions to Council this morning at the public hearing involving the above noted re-zoning application. As per Councillor Carr's request, I enclose a link to a recent blog of Mr. Geller. I note that he has added additional commentary to his of July 6, 2020 entitled ?Why I oppose later 28 storey 10.52 FSR Proposal for Broadway & Birch? (which was the one to which I referred in my oral comments and the link I included in submitting written comments at the City's comment site for this hearing), but you will find all commentary here? <a href="http://gellersworldtravel.blogspot.com/2020/07">http://gellersworldtravel.blogspot.com/2020/07</a> [gellersworldtravel.blogspot.com/] Thank you and regards, Kathleen Duffield	Kathleen Duffield		s.22(1)	Unknown	No web attachments.
07/10/2020	10:32	PH2 - 1. CD-1 AMENDMENT: 2538	Oppose	Speaker #40 presentation notes.	John Haylock		s.22(1)	Unknown	APPENDIX C

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07/10/2020	10:52	PH2 - 1. CD-1 AMENDMENT: 2538 Birch Street (formerly 1296 West Broadway)	Oppose	I wish to write my opposition to this development. It is simply too tall, and does not fit within the character/other buildings in the neighborhood. It is designed to be over 100 ft taller than the nearest mid-rise building. A different building of this height should not be approved until the ongoing Broadway corridor plan is complete. I am all in favour of density, and adding affordable rental stock to the area and City of Vancouver. As a resident of the area, I am in favour of the approved application for a 16 story building, as it fits with other mid-rise buildings along the Fairview stretch of the Broadway corridor. I ask you to deny this application.	Glenn Deverteuil		s.22(1)	Fairview	No web attachments.
07/10/2020	10:52	PH2 - 1. CD-1 AMENDMENT: 2538 Birch Street (formerly 1296 West Broadway)	Oppose	Shadow Studies as requested along with elevation outline and a note on the results. Feel free to call if you have any questions. Thank you for taking the time. John Haylock s.22(1)	John Haylock		s.22(1)	Unknown	APPENDIX D
07/10/2020	12:08	PH2 - 1. CD-1 AMENDMENT: 2538 Birch Street (formerly 1296 West Broadway)	Oppose	Please stop 28 floors building on Broadway Broadway and birch is not for multibillioneres to make more money and take our community over from USA RICH AMERICANS OR RICHANY NATIONALITY to come and make money and have another Manhattan stop 28 floors build 12 floor low rises as much as you want any where in Vancouver . with lots of communal green space. Have a vision for future . billionares they like pant house on highest building in any city specially Vancouver. Don't sell yourself out to money making developers machine . Stop slow down think for future	Mehrdad Tabrizi		s.22(1) Personal and	Fairview	No web attachments.



2538 Birch Street public hearing 9 July 2020

Thank you Mayor and Council.

My name is Peter Driessen, a Vancouver resident for 25 years. I am speaking against the recommended approval for 28 floors at this time.

Thank you for this opportunity to share my views.

I have heard the excellent presentations by staff and developer and the public speakers before me.

Let me first review my understanding of the City's goals that are relevant to the recommendation, and then outline the reasons why I am opposed to the rezoning at this time.

The City has goals related to housing in general and rental housing in particular, the Housing Vancouver Strategy 72,000 new homes over 10 years, 7200 per year, and there is an annual goal of approving 2,000 rental homes, and the Moderate income Rental Housing Pilot Program up to 20 rezonings for secured market rental housing

The City also has goals related to planning and engagement processes leading to good outcomes that help Vancouver maintain its top 10 ranking of globally most livable cities. In particular, a goal is to complete Broadway Plan in the next year.

These goals may appear to be in conflict today, and we need to resolve the conflict in the best interests of the community. We can resolve the conflict by simply delaying this application until the Broadway planning process is complete.

I am opposed to 28 floors at this time for 3 reasons

1. The Broadway planning and engagement process should continue. Approving this building at this time will disrupt that process.
2. There is Sufficient capacity along Broadway at 16 storeys to meet housing needs
3. Buildings need to be small enough to form a local community

My first reason for opposing 28 floors is that the Broadway planning process should continue without disruption and without prejudice to the outcome. The process should give voice to the very diverse community we have in the City. Approving the 28 floor building now would favor one particular voice over all others. This is not fair to the other diverse voices that also need to be heard while we work on the Broadway Plan. Equity, diversity and inclusion are important elements of our community, and we must not silence diverse voices by favoring the wishes of one particular voice now. Let's wait until the Broadway Plan is complete in a year from now, and then we will know what height of buildings we collectively wish to see on Broadway.

Approving 28 floors at this time effectively compresses a critical aspect of the Broadway planning process, building height, into this one public hearing. This is not good governance.

My second reason for opposing 28 floors is that there appears to be sufficient capacity along Broadway at 16 storeys to meet housing needs. A quick estimate using a floor space ratio of 3 and resulting mix of building heights up to 16 storeys yields about 6,000 apartments from 1 to 3 bedrooms along Broadway from Clark to Vine, not including the 6 Broadway blocks near the hospital, and not including commercial space. The details can be worked out as part of the Broadway planning process. The housing capacity of the proposed 28 floors can be simply achieved with two buildings of half the height including all the exciting features and amenities presented today by the developer.

My third reason for opposing 28 floors is that buildings need to be small enough to form local communities.

I quote from Thehappycity.com May 2017 posted on the internet

Social group size has a direct influence on the quality and intensity of trusting relationships that people develop. To maximize their social wellbeing, residents of multi-family housing developments need opportunities to meet and greet some – but not too many – of their fellow residents. Neighbours are most likely to interact and bond with one another when only a limited number of them use the same semi-public access paths or staircases. If there are too many people living within one development, there is a potential for residents to encounter more unfamiliar faces than they can keep track of. This causes anxiety and often leads people to retreat from social interaction

In summary, this is the wrong time to approve 28 floors. It is too early to decide if this is the right project, despite the many features and benefits. We should not disrupt the Broadway planning process. We should not prejudice the outcome of that process. Let the Broadway plan process run its course over the next 12 or so months, and let our many diverse voices be heard.

I expect that the outcome provide for many housing units along Broadway including moderate income housing, thus meeting the City goals related to housing mentioned earlier. The outcome will also represent the collective wishes of our diverse community about building height and other aspects. The Broadway Plan outcome will meet the City goal of completing successful public engagement processes, building a strong community and maintaining our status as one of the top 10 most livable cities in the world.

Peter Driessen

s.22(1) Personal

Date	First Name	Last Name	City	State/Province	Country	Why is this important to you?
7/6/2020	Chris	Newell	Vancouver		Canada	There is no need for a building of this height to be in a residential neighbourhood! It is totally out of character. Could set a precedent, to the detriment of the neighbourhood. 16 stories is too high but has been approved, so should go ahead as planned. Allowing developers to go back to Council with proposed changes to approved projects should simply not be permitted
7/6/2020	Claudette	Young	Vancouver		Canada	
7/6/2020	Katherine	Reichert	Vancouver		Canada	
7/7/2020	Emily	Gow	Vancouver		Canada	View corridors are important and effect community feel and mental health. All for affordable housing and increased density but at a reasonable scale to the area. Look at cuty hall & vgh heights - more than sufficient for the area. Overcrowding! Vancouver needs to remain a healthy habitat both physically and psychologically. Covid has shown the need for neighhbourd walking spaces and also physical distancing.
7/7/2020	Eileen	Anderson	Vancouver		Canada	
7/7/2020	David	Lemaire	Vancouver		Canada	
7/7/2020	pat	innes	vancouver		Canada	View corridors must be maintained.
7/7/2020	Cynthia	Becker	Vancouver		Canada	It will not fit in with the neighborhood and perhaps other larger buildings will follow. There is no reason to have a building this tall - it will cast a shadow on so much during most of the day. It should be a rental building not a commercial structure - so many storefronts will be empty due to COVID and we don't need more commercial space. I live in the neighbourhood and it will disrupt views of the beautiful mountains that is so important for mental health of residents.
7/7/2020	Harriet	Goodwin	vancouver		Canada	City should not spot rezone this building. It is too tall, will create a shadow right down to False Creek and will set a precedent for other taller buildings along Broadway. We need to keep the street for small businesses. We do not need to turn this corridor into a residential street filled with high rise apartment buildings.
7/7/2020	Jane	Frost	Vancouver		Canada	This is way too high for the neighborhood, and it upzones land. I'm worried about current affordable character lowrises being upzoned and torn down.
7/7/2020	Heather	Barclay	Vancouver		Canada	Not in character with the area. Traffic & view concerns!
7/7/2020	Marilyn	Miles	Vancouver		Canada	As a resident in this area, I am supportive of the 16-floor rental building but not 28 floors.
7/7/2020	Eilis	Courtney	Vancouver		Canada	
7/7/2020	Fiona	sheahan	Vancouver		Canada	
7/7/2020	Frances	Murphy	Vancouver		Canada	Too tall. Domino effect.
7/7/2020	Erin	Duncan	Vancouver		Canada	It is setting a precedent and will take away light and shadow existing residents and is just not the solution to more rentals in Vancouver. Neighbours have not been consulted or listened to. During Covid is the not the time to make huge sweeping changes to housing styles in Vancouver-high towers are also not a healthy way for people to live. We are destroying Vancouver
7/7/2020	Penny	Noble	Vancouver		Canada	

7/7/2020	Steve	Vanderwoel	Vancouver	Canada	Because I agree the the city of Vancouver's plan to establish Broadway as "a series of unique and inspiring places." This is not that, instead it is an overly dense block of residents taxing an area already under-provisioned for accessible parks, schools, groceries, and parking.
7/7/2020	Lynn	Mockler	Vancouver	Canada	Affordable rental housing is needed but this level of density is unwelcome, unnecessary, and completely changes the nature of an existing neighbourhood.
7/7/2020	Tamara	Heitner	Vancouver	Canada	Please stop building towers that are too high for these neighbourhoods. There are other ways to create more housing without blocking views and overcrowding an area. This is completely out of character for the neighbourhood. Why is this even being considered?
7/7/2020	Susan	Abs	Vancouver	Canada	The original 16 storey building fits with the neighbourhood and is consistent with what one would expect for the Broadway corridor, transit. However, the 28-storey building is too big, with too much massing for the site. There are insufficient park and open space amenities. MOST importantly, any change to the already-approved rezoning should not be approved until the Broadway Plan is completed. This undermines community belief in the process and is the kind of insensitivity to neighbourhood and place that built opposition to the previous Council's approach to development, i.e., lack of attention to context.
7/8/2020	Nicolas	Schmitt	Vancouver	Canada	Please stop buildings that are too high for many neighborhoods and added one at a time without overall urban planning about traffic, schools, etc.

I’ve been in a condo one block from the site of this proposed tower for 24 years. In that time I’ve seen some developments that have improved this lacklustre no-man’s-land that is West Broadway and some that haven't.

To erect a monstrosity not unlike the new behemoth at Kingsway and Broadway is going to be a blight on this neighbourhood. The Toys R Us/BowMac mash up was bad enough back in its day, but this new proposed build will absolutely dominate the landscape, block the light, and obscure the sky for so many of us who already live in small spaces with little to no view.

And then there’s the parking. Twenty four years ago when I moved here, there was ample available parking. Today, If I want my visitors to have access to a permit-free parking space nearby, I have to stake out my street for days, wait until a car moves out of one of the two coveted spots in front of my building, and move my car from the underground parking garage into that spot. The only other people I know who have to do things like that live in New York. That’s not my definition of “liveable”.

I ask city staff to please not allow this amendment to the already-approved 16-floor development. Don't make exceptions to rules you yourselves established. Don’t let greater density eclipse all other considerations. West Broadway needs a solid plan in place going forward that is going to work for those of us who have been part of this community for decades and those who see the value in making this their community of choice in the years to come. Don’t start a precedent with this build. It’s much too high. Let us continue to enjoy the sky.

7/8/2020	Christina	Peressini	Vancouver	Canada
7/8/2020	Martin	Dee	Vancouver	Canada
7/8/2020	Laura	Burden	Vancouver	Canada
7/8/2020	Roland	Plessis	Vancouver	Canada

A bad precedent. The neighborhood should be considered and respected.

7/8/2020	Mark	Fogelman	Vancouver	Canada
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This proposed 28 floor height will create a precedent for the whole area and along Broadway. It's too dense and too tall, if not stopped we'll end up looking like downtown: a shadowy, cold concrete jungle. 16 is tall enough!  
This is my neighbourhood. The increase in floors is just not acceptable. I agree more housing for rentals is necessary but not with this height. I know you will receive many more emails about this and much more better in explanations why this is a poor choice but to be clear this will be a huge mistake  
Thank you  
Patricia

7/8/2020	Patricia	LaCroix	Vancouver	Canada
7/8/2020	Daisy	Bunyan	Vancouver	Canada

7/8/2020	deborah burns	Vancouver	Canada	I live in a 2 story walkup. My privacy, airspace and sun light is at risk as more and more buildings go up all up and down broadway.
7/8/2020	J LaBossiere	Vancouver	Canada	
7/8/2020	Elizabeth Murphy	Vancouver	Canada	This sets a terrible precedent for the Broadway Corridor and city-wide.
7/8/2020	Michelle Boey	Vancouver	Canada	
7/8/2020	Jim Zadra	Vancouver	Canada	I live in the area and a building of this size takes away from the neighborhood. Should be low rise.
7/8/2020	Annie Siermy	Vancouver	Canada	
				I think that we can do better with our development in this city. Very high towers, and single family homes, are only serving specific demographics. The commodification of housing as a currency - "housing units" - leaves most of us behind. We need smarter density, starting with simpler and more affordable construction assemblies, and useful, flexible, accessible homes for real people.
7/8/2020	Chelsea Grant	Vancouver	Canada	
7/8/2020	Tiffany Murray	Vancouver	Canada	
				too   too high looks ugly
7/9/2020	Han Kwang Kim	Vancouver	Canada	don't be silly
7/9/2020	chan hee Kim	Vancouver	Canada	makes me dark world
				Maintaining the existing culture, view, and opportunity for the current neighborhood should be upheld. Not building a building that is out of place and sticks out like a sore thumb while paving the way for more high rises that drive the cost of living up in the future.
7/9/2020	Felicia Frederick	Vancouver	Canada	
7/9/2020	Chris Nicol	Vancouver	Canada	
7/9/2020	Hyung Kim	Vancouver	Canada	I live next door and oppose of this construction as well ! Simple .
7/9/2020	Darrell Kneller	Vancouver	Canada	There is already too much traffic on Broadway - the change from 16 floors to 28 floors is extremely significant! The building would be an eyesore, cast shadows, increase traffic, and create a dangerous precedent. The beauty of our city is its setting. The downtown core is already high enough and we donâ€™t need this kind of height in residential neighbourhoods.
7/9/2020	Jacquie Day	Vancouver	Canada	we oppose the tower to be build on Broadway because it is inappropriate location to have such a highrise. It will be an eyesore for the total neighborhood. There will be a traffic jam and air pollution as result of congested traffic. Please maintain the beauty of Vancouver. Don't put on each green space a tower!
7/9/2020	chen lie	Vancouver	Canada	

### Shadow Study: Results and Consequences

**SUMMARY:** I support taller development at the Stations and increased community density. I am concerned about substantial shading of the Burrard Slopes ("**Slopes**": Arbutus to Birch; Broadway to False Creek) from development over current height guidelines. Shadows were studied from 5 buildings @ 2 block intervals, 20, 30 & 40 floors, 1 hour after sunrise and before sunset for 5 months (October to February) when sunshine is at a premium. Study results are disturbing.

1. **4 of 5 study locations are already proposed:** 28 floors, 2 skytrain stations and Pine & 7<sup>th</sup>.
2. **Slopes topography is a high ridge @ Broadway equivalent to 13 to 16 storeys** e.g. 28 floors throws a shadow equivalent of 44 floors.
3. **Taller Broadway buildings have shadows 1.25x - 1.70x longer for the same building in other areas.**
4. **5 buildings cover 80% to 150% the Slopes with shadow paths.**
5. **Many areas will be hit 2, 3 or even 4 X per day** (see attached maps).
6. **Shadow coverage and multiplicity of impacts is permanent**, unlike lack of schools, parks, transit etc. issues which can be resolved.
7. **Every community deserves equitable, fair and reasonable access to sunlight.** Tall Broadway buildings result in an unreasonable and disproportionate loss of sunlight for the Slopes.
8. **COV highlighted these shadow issues and recommended keeping taller building S of Broadway (*Central Broadway C-3A Urban Design Guidelines*)**
9. **COV Parks Board highlighted park shading as a problem issues. (*Vanplay*).** Slopes suffers from lack of park space in the face of increasing density.
10. **Previous COV Skytrain development** has followed a plan of station height, with immediate down transition within 300'. 28 floors, at almost 1,200', is not close to these guidelines: Delta proposal at Pine & 7th is over 1,400'. **Why is the City not following its own Skytrain guidelines, particularly in this shadow sensitive development area?**
11. **Major artery density is underutilized.** Density goals can be achieved within existing zoning and height at the Stations. 2X14 floors = 1X28 floors - keeps land costs low and enables mass timber construction. **Why not use the zoning that currently exists?**

**BROADWAY & BIRCH: Should not proceed at 28 floors.** The 17 floors currently approved already exceeds existing zoning:

1. 28 floors will throw a **44 storey equivalent shadow** as it is located at the **highest point in the Study area** at 164'. It will **double up on shadows from a tall building at the Granville station.**
2. **It does not meet COV's Skytrain development guidelines of transitioning down from the station.**
3. I support **taller development at the Stations**; they are 8 blocks apart. **As you fill in 20+ buildings between those stations then you don't just get long shadows, you get shadows 3 or 4 X per day** which, essentially, **drains the sunshine out of this shadow sensitive community.**
4. It sets a **dangerous precedent** for the Slopes as it indicates **COV supports tall developments along Broadway.**
5. **28 floors is a substantial departure from, and does not integrate with, Slopes development.**

**STUDY BACKGROUND:** Background documents provide some context:

- COV's *Central Broadway C-3A Urban Design Guidelines*:
  - "Sunshine is precious in Vancouver, particularly during the winter months....Buildings on the north side slope of Broadway should be sized and shaped to minimize shadow effect"...**"Higher buildings should be permitted immediately adjacent to the "gateway" (e.g. 14th and Granville)...**the development should be **reduced in height from this point.** The result is C3-A building height restrictions of 100 feet (10-12 floors).
  - To date, the **COV has resisted allowing buildings materially above 12 floors in the Slopes** 28 floors is a substantial departure from historical development.

- Vanplay (2018) from the Parks Board:
  - ***“Shadows from new buildings ... dramatically change the nature of these green spaces and our enjoyment of them”***
  - ***“balance the need for new buildings while maintaining solar access for our parks and streets”***
  - ***“building of increasingly taller structures needs to be carefully considered ... sunshine is a fundamental building block of our parks”***
  - Fairview Slopes area lacks parks, exacerbated with increasing density. Shadows will permanently impact existing and future park development.
- COV Premise for Transit-oriented Skytrain Development:
  - ***“A key factor in establishing building type and height is the relationship and integration with the surrounding neighbourhood.”***  
*“Basic premise of transit-oriented development: density is best located in close proximity to a transit station. The Station Precinct Review, density was tested with the tallest buildings at the station, transitioning down in all directions away from the station.”*
  - Seen in a number of transit developments: transitioning within 300’ e.g. Joyce Collingwood, Marine Drive, Oakwood, Langara, King Edward park etc.
  - **28 floors at 1,200’, does not meet that premise. Delta proposal at Pine & 7<sup>th</sup> is over 1,400’!**
- **Do 20+ storey buildings justify the unreasonable and disproportionate loss of sunlight the Slopes will bear? Every community deserves equitable, fair and reasonable access to sunlight for homes, schools, businesses & parks.**

**STUDY:** The purpose of this study was **not to evaluate the shading on a nearby park, building or street, but** how these taller building shadows impact **parks, schools, residences, tourist areas, shopping districts and commercial and light industrial areas of an entire community**, for several months during the year. 820 shadow studies for 20, 30 & 40 floor buildings were completed each month one hour after sunrise and before sunset for 5 months (October to February).

- **Unique Slopes topography:** Broadway has the equivalent to 13 to 16 storeys of building height above nearby False Creek e.g. 28 floor shadow length is equivalent to 44 floors which **lengthens the Shadows as they cast down that slope to the water.**
- **5 X 20, 30 & 40 floor buildings were evenly spread @ 2 block intervals along a 1.4 km length of Broadway. 4 of these sites are already proposed** (Birch & Broadway 28 floors, Pine & 7<sup>th</sup> 35-40 floors and Granville and Arbutus transit stations). The Study evaluated the shadow paths (areas where the shadow crosses from west to east) for building heights of 20, 30 & 40 floors. **The results are disturbing.**

#### **RESULTS:**

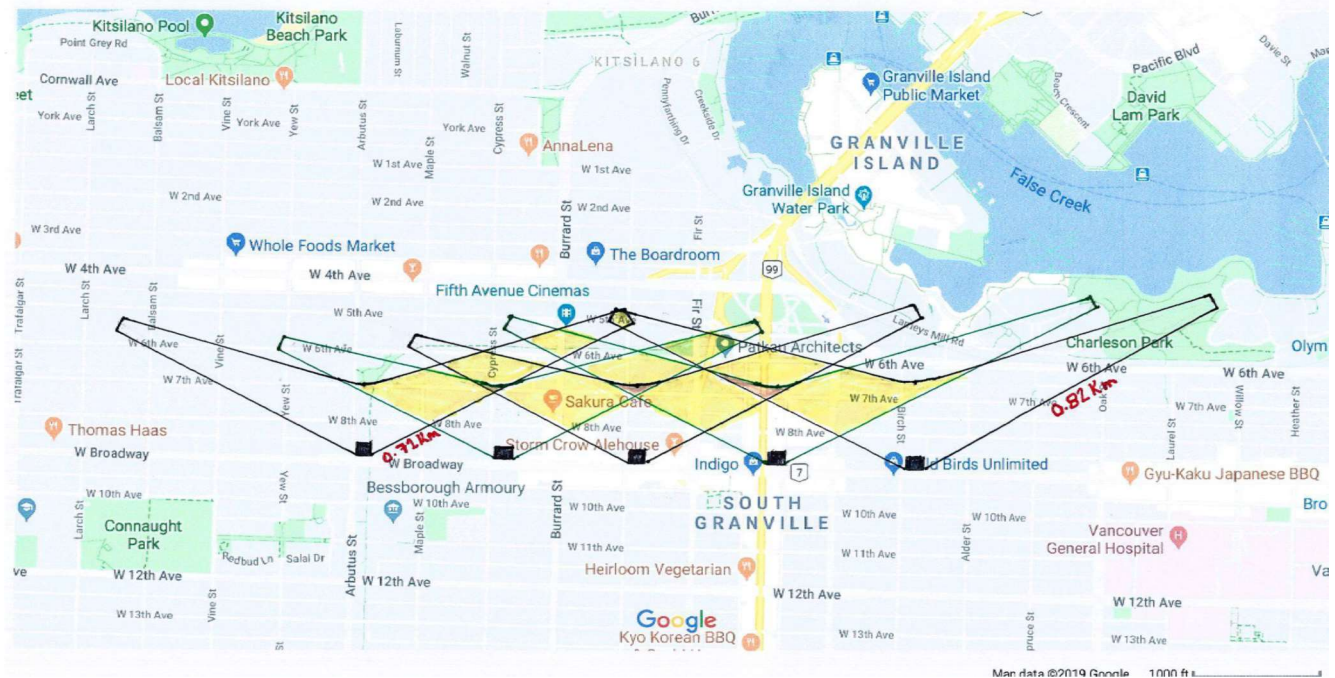
- **Shadow length is 1.25x - 1.70x that of other areas significantly increasing the shading impact.**
- **5 buildings at 30 or 40 floors shadow paths will cover 80% or 150% the Slopes, respectively.**
- **Many areas will be hit with 2 (yellow), 3 (orange) & 4 (red) shadows each day from various buildings (see maps below). Shadow length, breadth and multiplicity of impacts on the Slopes will be substantive and permanent. 5 months is not an inconsequential period of time to endure significant shading!**
- **Shadowing will permanently impact parks (e.g. Arbutus, Kits, Charleson, Granville Loop, David Lam), schools, residences, tourist areas (e.g. Granville Island, Seawall, Armory District), shopping districts (e.g. Broadway and 4<sup>th</sup> avenue) and commercial and light industrial areas (IC-1 and IC-2).**
- **Shadow map examples attached. The “V” shape is a result of longer shadows in the early morning and late afternoon when families leave and return from work and school, shortening at as you approach noon.**



## Addendum: Shadow Map Examples

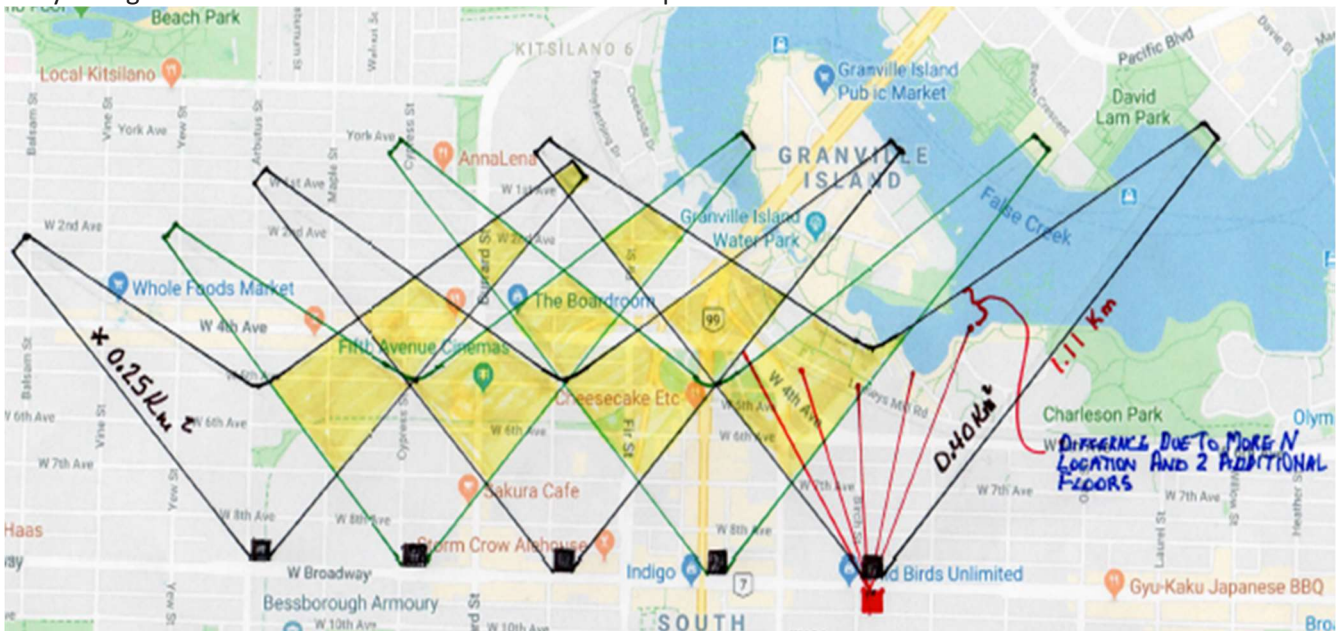
**Oct 21 – 30 floors:** Yellow & orange highlight areas hit by shadows 2 & 3 times each day. Note the impact goes well beyond Arbutus to Birch.

Daily sunlight 10:28. Time Frame: 8:42 am to 5:10 pm



**Dec 21 – 30 Floors** 28 floor Broadway and Birch proposal shadow study in red - only 10 am to 2 pm shown. @9:05 it is near 3<sup>rd</sup> ave. @ 3:16 it crosses Charleson into False Creek. Note the length of the E shadow at Birch is over a km long in the late afternoon.

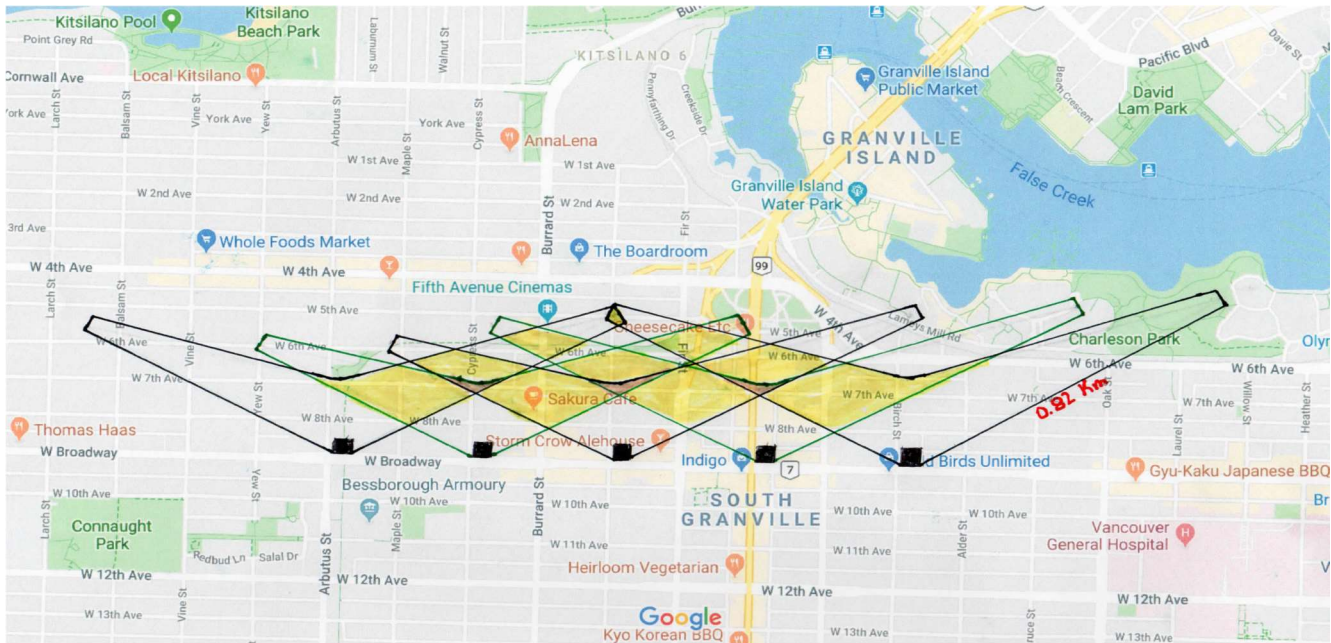
Daily sunlight 8:11 hours. Time Frame: 9:05 am to 3:16 pm





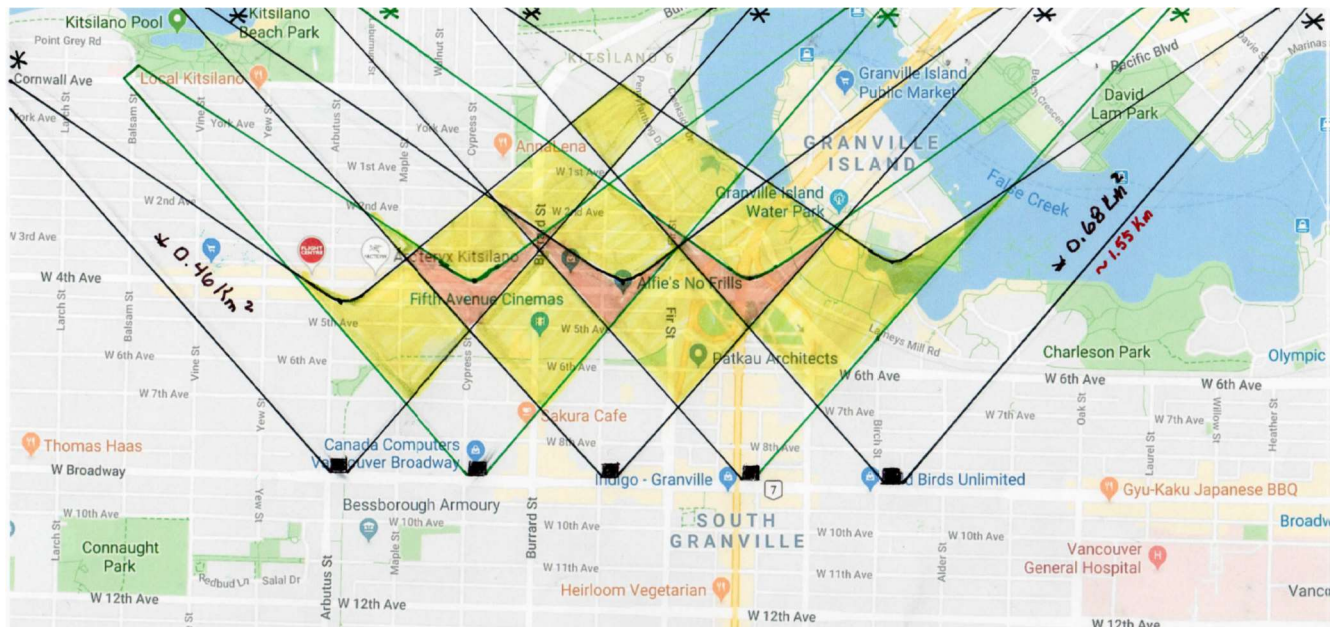
**Feb 21 – 30 Floors.** Even in Feb you still see areas with shadows 3 X per day.

Daily sunlight 10:30 hours. Time Frame: 8:11 am to 4:41 pm



**Dec 21 – 40 Floors.** FYI. From Arbutus to Birch everything N of Broadway is in shade 2 or 3X every day. Shadows reach well across False Creek.

Daily sunlight 8:11 hours. Time Frame: 9:05 am to 3:16 pm



- The addition of buildings to the west, east or in between these 5 will result in further multiple shadow hits (i.e. yellow, orange and red)
- Density along major arteries is dramatically underutilized. Density goals can be easily achieved with existing zoning and height AT the Stations. 2X14 floors = 1X28 floors and keeps land costs low.

**Data Efficacy:** a) all shadow data developed using Sketchup2019 which is utilized within COV development departments. The data was confirmed to be correct relative to three developer shadow plans from three city locations (including two in the Slopes @ Pine and 7<sup>th</sup> and Birch and Broadway), b) elevation data comes from Daft Logic Mapping using Google Maps. It was also confirmed via comparisons to developer representations.

**Recommendations:**

1. **Slopes Official Community Plan**, like the *Central Broadway C-3A Urban Design Guidelines*, needs to **reflect building height <13 floors (~27 floor equivalent to flat terrain)** due to shadow sensitivity created by Broadway Ridge development.
2. The **strategy to transition height down from Skytrain** stations such as Joyce, Marine Dr., Oakwood, Langara, King Edward **is not apparent** given the locations under consideration such as the 28 floor **Birch and Broadway** and 35-40 floor **Pine and 7<sup>th</sup> buildings**. It does not “transition down” and it does not “integrate with the existing community”. If height is approved beyond the Skytrain stations along Broadway, City Council would then be breaking precedent in the shadow sensitive Slopes? **The 28 & 40 floor buildings being considered must not be allowed to proceed at those heights.**

**Key Question:** The question that should be asked of City Planners and City Council is, “do you wish part of your legacy to be the permanent shadowing of the Slopes?” That may sound dramatic but **already four of the five buildings are at some level of proposal** and we have not yet “started” the development process under the new Official Community Plan. **If these are approved at 20+ floor heights this is likely the beginning not the end.** The major shadow concerns outlined herein will be modest compared to what could be **as the developers get approval to fill in the “picket fence” of tall buildings along the Broadway ridge. 28 Floors is the first out of the gate but won’t be the last, particularly if approved at this height.**

### **Burrard Slopes Shadow Analysis (the “Study”) Detailed Results & Consequences**

The Burrard Slopes area (“**Slopes**”) is from Arbutus to Birch and Broadway to the water – although, in many cases, the shadows go well beyond.

**Background:** The City is currently developing an Official Community Plan for the Broadway area. It is well understood that North facing slopes extend shadow length and breadth. This Study is to help understand the impact of building height and location along the Broadway ridge on these extended shadows across and beyond the Slopes and, to then inform decision makers as to the results.

The Study incorporates five building locations on Broadway. Development proposals are already in place at four of the five locations, notwithstanding a moratorium on development. These four locations are Skytrain stations at Arbutus and Granville, a 28 floor building at Birch and Broadway from IBI Group and a 35-40 floor building at Pine and 7<sup>th</sup> from Delta Land Corp. (vs. Pine and Broadway in the Study). This leaves only one location that is not yet under proposal along this 1.4 km stretch of Broadway. The five building sites in the Study are widely spaced at two block intervals.

**Unique Slopes Topography (See Elevation Slide for detail):** The Slopes have a unique topography that has a ridge at Broadway with a North facing downward slope from that Broadway ridge to sea level at False Creek. The key elements that impact shadow coverage are: 1) building height, 2) building location and 3) water (sea level) proximity i.e. the closer the water, the greater the shadow increasing down slope magnitude. Birch, for example, has the most dramatic downward slope as it combines both the highest land location of the five and is also closest to the water. The result is shadows from Birch building locations are impacted more severely than the other four building locations in all directions i.e. Northeast and Northwest. Building shadows at Arbutus, on the other hand, are less impacted as it is the second lowest land location and furthest away from the water resulting in a more gentle slope.

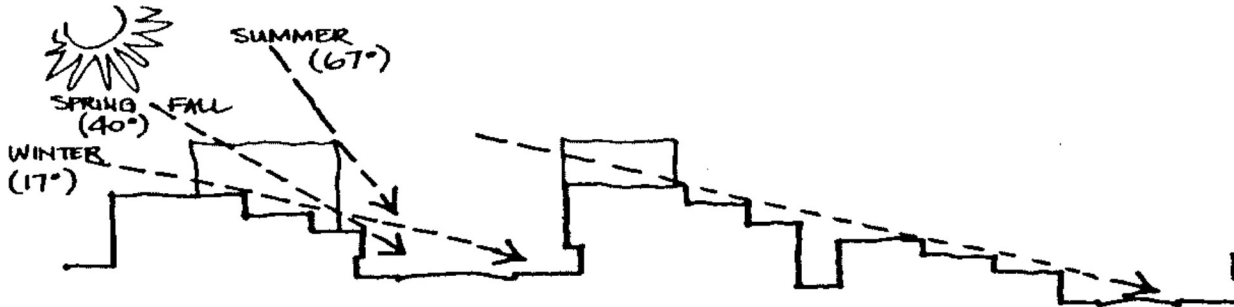
**Slope Summary (See Burrard Slopes Elevation Map for more detail):**

- West to East along Broadway, the land height generally increases from 128 feet at Arbutus, peaking at 157 feet at Birch. These land heights are equivalent to 13 to 16 storeys of building height i.e. the lot is the equivalent of a building is 13 to 16 stories above the water.
- From South to North, the downward slope is more dramatic at Pine, Granville and Birch, which are closer to the water at False Creek, and less at Arbutus and Cypress which are further away.
- Within the context of the C3-A zone which extends down to 6<sup>th</sup>, buildings closer to 6<sup>th</sup> at Pine, Granville and Birch, while slightly lower along the slope, are relatively much closer to sea level. The result is buildings in these locations will see more shadow impact from the slope than at Broadway. The reverse is true as you move South from Broadway to 14<sup>th</sup>, for example, where you combine a leveling slope with added distance to the water.

#### **The City’s Documented Perspective:**

- A. Central Broadway C-3A Urban Design Guidelines July 2004 (includes the Slopes) outlined a number of issues attributed to the slope, the discussion of which, was prominent in the Guidelines:
  - *“Higher buildings should be permitted immediately adjacent to the “gateway” (e.g. 14th and Granville)...the development should be reduced in height from this point (or terraced down with the slope of a hill) to allow for the widening of views as the bridges are approached.”*
  - *“Massive (bulky) buildings at or near high points of land and upper slopes overwhelm land forms, block potential views and often disrupt areas when seen as a silhouette against small scaled structures.....backlit during the day when seen from downtown.”*
  - *“Sunshine is precious in Vancouver, particularly during the winter months”*

- "Buildings on the north side slope of Broadway should be sized and shaped to **minimize shadow effect** on the adjacent communities to the N....Average building height should reflect the predominant height in the surrounding area."



The above graphic shows the lengthening shadows in Spring, Fall and Winter scenarios where the slope has its greatest impact.

- B. VanPlay - Vancouver's Parks and Recreation Services Master Plan: Goal #2 "Protect existing parks and recreation spaces from Loss, Encroachment & Densification"
- "Shadows from new buildings adjacent to parks can dramatically change the nature of these green spaces and our enjoyment of them... while the city has worked hard to **balance the need for new buildings while maintaining solar access for our parks and streets, the building of increasingly taller structures needs to be carefully considered.** We believe that **sunshine is a fundamental building block of our parks**, which is why we're developing clear **policy to help preserve it.**"
- The Park Board has also outlined concerns regarding the **lack of parks in the Fairview area particularly given increasing densification so the impact of excessively tall building induced shadowing is more impactful on those using the parks.**

**Study Purpose:** The Study highlights the impact of shadowing on the Slopes. It is not focused on an existing park or building or street but how these taller buildings can impact a community as a whole given the downward sloping topography of the Slopes.

It is understood that there are a number of buildings currently under consideration including Birch and Broadway proposed at 28 floors, Granville and Broadway proposed at 6 floors and Pine and 7th proposed at 35 to 40 floors. For this reason, the Study evaluated the shadow impact of five mock-up (100'x100' floorplate) buildings each at 20, 30 and 40 floors located along the Broadway ridge line from Arbutus to Birch. NOTE: Shadows generated go well beyond the Slopes, particularly those from the Pine, Granville and Birch locations as those areas exhibit relatively steep slope characteristics.

**Study Method:** As stated in various City documents:

"Sunshine is precious in Vancouver, particularly during the winter months."

"Buildings on the N side slope of Broadway should be sized and shaped to minimize shadow effect on the adjacent communities to the N"

"Shadows from new buildings adjacent to parks can dramatically change the nature of these green spaces and our enjoyment of them...building of increasingly taller structures needs to be carefully considered ... sunshine is a fundamental building block of our parks"

For this reason, the Study focused on the shadow impacts on the Slopes during the five months of late fall, winter and early spring. It maps the shadowing impact on parks (e.g. Arbutus, Kits, Charleson, Granville Loop, David Lam), schools, residences, tourist areas (e.g. Granville Island, Seawall, Armory

District), shopping districts (e.g. Broadway and 4<sup>th</sup> avenue) and commercial and light industrial areas (IC-1 and IC-2)

Data Numbers: Shadows were generated for the 21<sup>st</sup> day of five months from October to February (average sunshine of 9.4 hours per day) from one hour after sunrise to one hour before sunset (average 7.4 hours per day) resulting in 47 shadow studies and for each of 20, 30 and 40 floor buildings at the five locations. This resulted in a total of 820 individual shadow studies (available upon request), including 705 (47 dates & times x 5 locations x 3 heights) specific to the attached shadow map creation, shadow comparisons with developers and comparisons with flat terrain (near YVR) compile the remaining shadow studies. These individual shadows were then mapped by hand by building and by date to produce 15 shadow maps which outline the “V” shaped shadow path for each of the three building heights during each of the five months. The path is “V” shaped as the shadows are longest earlier and later in the date when adults are going to/from work and children are going to/from school. Essentially, the Study outlines the shadow path for 20, 30 and 40 floor buildings at five locations on the North side of Broadway for 5 of the 12 months of the year.

Building Locations: The City typically desires higher buildings at the Skytrain stations (Arbutus and Granville) and then transition down from there and, as such, those building locations were included. The Study added only three additional building locations in the 1.4 km distance resulting in even spacing of two blocks apart along the North side of Broadway. The three other locations were Birch (which helps to understand the Slopes shadow impact of the proposed 28 floor building), Pine (which helps to understand the Slopes shadow impact from a proposed 35 to 40 storey building at 7<sup>th</sup>) and Cypress. Each building mock-up is consistent with a floorplate of 100 by 100 feet and heights of 200, 300 and 400 feet (representing 20, 30 and 40 storeys). Each resulting diagramed “V” represents the shadow path from one hour after sunrise to one hour before sunset. In cases where paths cross, the area is colored to indicate the number of times a particular area is hit by shadows from neighbouring buildings (Yellow=2, Orange=3 and Red=4 multi-shadows a day from various buildings. NOTE: there are no buildings beyond these five so there are no multi-shadow interactions from buildings beyond of these five – clearly there would be multi-shadow interactions if additional buildings were incorporated).

**Study Results:** As expected with the slope topography analysis, the results of the Study indicate a substantial shadow impact on the Slopes from just five buildings.

Shadow Length (km) Comparison: Flat Topography vs Arbutus vs Birch slope Topography

One Hour Before Sunset	SHADOW LENGTH COMPARISON VS. FLAT TERRAIN (Km)					ARBUTUS VS BIRCH
20 FLOORS	Flat Terrain**	Arbutus	Difference	Birch	Difference	Difference
October 21 @ 5:10 pm *	0.41	0.48	17%	0.62	51%	29%
November 21 @ 3:24 pm	0.48	0.68	42%	0.87	81%	28%
December 21 @ 3:16 pm	0.52	0.75	44%	0.94	81%	25%
January 21 @ 3:49 pm	0.48	0.64	33%	0.82	71%	28%
February 21 @ 4:41 pm	0.37	0.49	32%	0.61	65%	24%
<b>30 FLOORS</b>	0.45	0.61	<b>34%</b>	0.77	<b>70%</b>	<b>27%</b>
October 21 @ 5:10 pm *	0.62	0.72	16%	0.82	32%	14%
November 21 @ 3:24 pm	0.73	0.90	23%	1.07	47%	19%
December 21 @ 3:16 pm	0.80	1.01	26%	1.11	39%	10%
January 21 @ 3:49 pm	0.69	0.89	29%	0.97	41%	9%
February 21 @ 4:41 pm	0.57	0.72	26%	0.82	44%	14%
<b>40 FLOORS</b>	0.68	0.85	<b>24%</b>	0.96	<b>40%</b>	<b>13%</b>
October 21 @ 5:10 pm *	0.81	0.94	16%	1.24	53%	32%
November 21 @ 3:24 pm	0.98	1.24	27%	1.39	42%	12%
December 21 @ 3:16 pm	1.10	1.50	36%	1.55	41%	3%
January 21 @ 3:49 pm	0.96	1.20	25%	1.29	34%	8%
February 21 @ 4:41 pm	0.78	0.93	19%	1.07	37%	15%
* Daylight Savings Time	0.93	1.16	<b>25%</b>	1.31	<b>41%</b>	<b>14%</b>
** Williams Rd & #2 Rd By YVR						

The shadow length one hour before sunset of the same buildings were taken at Williams Rd. and #2 Rd. in Richmond (representing flat topography) and compared to the shadow length at each of Arbutus and Birch. The slope lengths were substantially longer: 24% to 34% at Arbutus and 40% to 70% at Birch. The slope topography of the Slopes is significantly more sensitive to shadow length than that of flat topography. These figures also underscore the more significant sensitivity to shadows that Birch has over Arbutus.

Shadow Map Length (See Shadow Maps for 20, 30, 40 floors): Shadow lengths increase dramatically (more to the water i.e. Northeast) and are longest in the Study at Birch. Further, their reach impacts many areas beyond the Slopes.

- 20 Floors: In the 20 floor study, the average shadow lengths were 0.61 km and 0.77 km for Arbutus and Birch, respectively with Birch, on average, 27% longer. The longest shadows at 0.94 km, just about reach David Lam Park across False Creek. For three of the five months, the shadows reach beyond 4<sup>th</sup> avenue to the N, with several reaching into False Creek. All of the five months have an East to West footprint from Vine St to Laurel St. which puts the shadow path six blocks outside of the Slopes.
- 30 Floors: The 10 extra floors make a substantial difference to the shadow lengths as the slope is now fully engaged in extending the shadow path. Average shadow lengths were 0.85 km and 0.96 km for Arbutus and Birch, respectively with Birch, on average, 13% longer. The difference in length between Birch and Arbutus is much less than in the 20 floor study as the Arbutus location is now almost fully engaging its slope. Most of the difference now lies in the difference in building location height. A number of shadow lengths are now at, or in excess of a kilometer. To the North, during three of the months, the shadows reach between 1<sup>st</sup> and 2<sup>nd</sup> avenues. The East to West footprint extends eight blocks beyond the Slopes, covering almost from Balsam to Willow.
- 40 Floors: This scenario develops shadows well beyond reasonable. Average shadow lengths were 1.16 and 1.31 km for Arbutus and Birch, respectively with Birch, on average, 13% longer. Virtually all shadows are over a kilometer in length, one peaking at 1.55 km. To the N, on three of the months, the shadows cover much of Granville Island with a number reaching Cornwall and across False Creek. In the December 21 analysis, two of the five shadows reach Kits Beach and two reach past Pacific Blvd., two to three hundred meters up the land in North False Creek. The East to West footprint now reaches 12 city blocks beyond the Slopes (which is only eight blocks wide), covering from Trafalgar to beyond Heather.

Shadow Map Coverage Area: Shadow coverage is the most important aspect of this analysis as it highlights how long a particular area spends in shade. The months of October, November, December, January and February have 10:28, 8:52, 8:11, 8:53 and 10:30 hours:minutes of sunlight a day, respectively. On average, that is 9.4 total hours of sunlight per day. The Slopes area is 1.97 sq km including Granville Island.

- 20 Floors: At the peak shadow coverage on December 21, Arbutus and Birch shadow areas are 0.11 and 0.20 sq km, respectively. Using those two areas as a proxy for the five areas  $[(0.11+0.20)*5/2]$ , it is estimated that the total shadow path coverage is approximately 0.76 sq km. This shadow coverage represents 40% of the Slope area from just five 20 floor buildings on Broadway! Bear in mind, there are no other buildings represented beyond the five.
  - What is most disturbing for the residents within the Slopes is that there are seven large areas roughly  $\frac{3}{4}$  to a full city block in size (yellow) that will receive double the amount of shade as they are covered by two different buildings at separate times of the day. This is the situation in ALL of the months studied.



- 30 Floors: At the peak shadow coverage on December 21, Arbutus and Birch shadow areas have now doubled to 0.25 and 0.40 sq km, respectively. Again, using those two areas as a proxy for the five areas, it is estimated that the total shadow coverage is approximately 1.63 sq km. In comparison to the Slopes, this has increased to 82% - five 30 floor buildings on Broadway in the Slopes now cast a shadow path on an area nearing its size!
  - There are now 10 areas in all months studied that receive shading twice a day. These areas vary in size but, save one, all cover between one and four city blocks each. Again, this is the situation in ALL of the months studied.
  - Also of note in the four months excluding December, is the emergence of areas that are shaded three times a day (orange).
  - Of note, the IBI Group shadow study for 28 floors at Birch was added to the 30 floor coverage map. As expected, there is a small difference in length due to the 2 floor difference and South, vs. North, Broadway location (note that these shadows do not quite reach sea level so do not take full advantage of the slope in extending their reach).
- 40 Floors: At the peak shadow coverage on December 21, Arbutus and Birch shadow areas have now doubled to 0.46 and 0.68 sq km, respectively. Again, using those two areas as a proxy for the five areas, it is estimated that the total shadow path coverage is approximately 2.85 sq km. These five buildings from Arbutus to Birch now cast a shadow across almost 1.5 times the Slopes area i.e. the total land area North of Broadway to the water!
  - A single building, for example a 40 floor building at Broadway and Pine (very similar to the proposal two blocks N at 7<sup>th</sup> and Pine), casts a shadow on December 21 that covers 0.60 sq km, almost a third the size of the Slopes!
  - There remain 10 areas that receive shadows at two times during the day. Again, each one on average covers several City Blocks.
  - There are now several areas that receive shadows three times during the day (orange) covering between ½ to 1 ½ City blocks each.
  - A few areas have emerged that receive shadow four times during the day (red). Depending on the month, they may converge into orange reducing their shaded period to “only” three times a day in an average 7.4 hour period i.e. every 2.5 hrs another shadow appears. Most impacted is the Arbutus Corridor parks to the shopping district on 4<sup>th</sup> avenue. If the buildings are on the South side of Broadway then that will include the Broadway shopping district as well.
- Cumulative Effect: Notwithstanding the generous 2 block spacing for the five buildings, there are a number of locations that are shaded by more than one building during the day. Those areas outlined in yellow or orange or red are shaded two or three or four times during the day, respectively. It indicates that, even though the shadow will have passed, there will be another one later in the day.
- This Study has not placed any buildings East of Birch. Alder, Spruce, Oak, Laurel, Heather etc. have significant heights and very steep slopes which most certainly means that the shadow coverage with buildings at these locations will leave the Slopes and East under significant shading for the full 5 months from October to February.

**Properties Under Discussion:** What is outlined above is about the shadowing of the Slopes North of Broadway with the placement of five along the North side of Broadway. These buildings act like a picket fence in that the greater the number and height of buildings (pickets) the more propensity for the crossing of shadows thereby placing areas under shadow multiple times a day.

- The City has historically zoned for taller building at, or very near (within 300 feet) the Skytrain stations, dropping to Low and Mid-Rise (4-12 storeys) thereafter. Analysis of a number of new



Skytrain station developments e.g. Joyce Collingwood, Marine Drive, Oakwood, Langara and King Edward, support this premise. As indicated in a few station plans, the City has historically planned the following:

*“A basic premise of transit-oriented development is that density is best located in close proximity to a transit station. As part of the Station Precinct Review, density was tested with the tallest buildings at the station and transitioning down in all directions away from the station.”*

*“A key factor in establishing building type and height is the relationship and integration with the surrounding neighbourhood.”*

- For perspective, Granville and Arbutus are six blocks apart. “Transitioning down” at three blocks from each station means NO transitioning. The City is right to measure transitioning in hundreds of feet rather than City blocks
- There are currently proposed two taller buildings on, or near Broadway: one is at Birch and Broadway (28 floors) TWO BLOCKS from the Granville Station and the other is at 7<sup>th</sup> and Pine (35 to 40 floors) FOUR:SIX BLOCKS from the Granville:Arbutus Stations. Neither of these buildings meet the City’s premise for transit station height development as a) they are not “at the station” and b) do not represent “transitioning down in all directions away from the station”. At the Arbutus station, Pinnacle Living on Broadway across the street is representative of transitioning down from the Arbutus Station across the street. Concern exists as to the City’s plan in respect of the two proposed properties at Birch and Pine and what that will mean for the rest of the neighbourhood development. If approved at these heights, the shadow impact will be significant all the way to False Creek and beyond. These shadowing issues will dramatically increase if the City also places relatively high buildings at the Arbutus and Granville transit stations and worse if there additional taller buildings fill in the “transition” to the stations.
- Birch and Broadway: It is unclear as to why this building would be approved at 28 floors. As a 17 floor building, it is not able to take full advantage of the down slope thereby moderating its shadow length and coverage. As previously indicated, Birch represent the least desirable location of the five represented i.e. it is literally on the worst location for a taller building for a number of blocks along Broadway. At 28 floors and that location, as already shown, the shadowing is damaging to the well-being of the parks, residents tourists, shoppers and business owners in the community. From the developer application for 2538 Birch Street:

*“The shadow study shows the minimal change of the proposed 28 storey building compared to the approved 17 storey building. The building will cast a shadow on office buildings on the north side of West Broadway for a short period during the day, depending on the time of the year [key statement]. The proposed building does not cast shadows south of the lane between West Broadway and 10th Avenue.”*

Incorrect statements when you look at their own shadow study for December 21 (represented in red on the December 21, 30 floor shadow map). It is very easy to say the shadows are minimal in the summer months when all of Vancouver is awash in sunshine. Different story for the winter which is borne out by their own December 21 study. The 17 storey building shadows are marginally longer than the shadows of those lower buildings across the street (closer to the slope). The length increases dramatically when the building reaches 28 floors. Of course, later in the day and during the October to February time frame, the difference is dramatic e.g compare shadow paths for 20 and 30 floors to see what happens when the slope is fully engaged.

- Granville and Broadway: 5 floors and 6 floors of underground parking. The low height of this building does not appear to follow the City’s goal of wanting to build height at the transit

stations and considering the possibility of a 28 floor building two blocks away. At this location, a taller building would meet the City's stated transit development plans "transition down in all directions" including Birch and Broadway. Not sure why the height is so low given the City's desire for height at station locations. With 6 floors of underground parking, perhaps this is not the final height the developer is looking for and will re-submit for development once the Broadway OCP is complete. If this building is substantially higher than another "picket in the fence" will be complete.

- 7<sup>th</sup> and Pine: 35 to 40 floors. As can be seen in the shadow plan for 40 floors at Pine, the shadow are beyond reasonable. By placing it a 7<sup>th</sup>, and not Broadway, that will further exacerbate what is already a massive shadowing problem. The Broadway and Pine 40 floor building underscores the large extent of the shadow reach and propensity to generate areas with multiple shadow periods during the day (see Oct. 40 floors). As it is, the shadows reach Granville Island, False Creek and beyond to the land on the North side of False Creek. The initiative of the builder to want to build a wooden structure at that height is to be commended, but this particular location would be enormously damaging to the community, including the North side of False Creek. It would be better served to be placed, for example, at UBC where it is away from the Broadway Ridge and its shadows can cast within Pacific Spirit Park. It is not a coincidence that the developer has oriented the building so that its' garden get full access to the sunlight to the South.

### **Summary:**

The shadow study had **only 5 building sites** spread at 2 block intervals along a 1.4 km length of Broadway. Most disturbing is that **4 of these building locations are already proposed** (Birch & Broadway 28 floors, Pine & 7<sup>th</sup> 35-40 floors and the Granville and Arbutus transit stations). The Study evaluated the shadow paths for building heights of 20, 30 & 40 floors. The results are disturbing

- **Slopes topography is unique.** The land height above sea level of the Broadway ridge generally increases from 128 feet at Arbutus to a peak of 157 feet at Birch. These land heights are equivalent to 13 to 16 storeys of building height i.e. the lot is the equivalent of a building is 13 to 16 stories above the water. Relative to a flat area, shadow length can vary from 1.25x - 1.70x longer for the same building!
- The **Slopes cover 2 sq km. 5 buildings at 30 or 40 floors** will result in shadow paths (areas where the shadow crosses from west to east) covering an **area equivalent 80% or 150% that size.** Also, **many areas will be hit with 2 (yellow), 3 (orange) & 4 (red) shadows each day** from various buildings. **Shadow length, breadth and multiplicity of impacts** on the Slopes will be substantive and permanent. **5 months is not an inconsequential period of time to endure significant shading!**
- Shadowing will **permanently impact parks** (e.g. Arbutus, Kits, Charleson, Granville Loop, David Lam), **schools, residences, tourist areas** (e.g. Granville Island, Seawall, Armory District) and **shopping districts** (e.g. Broadway and 4<sup>th</sup> avenue) and **commercial and light industrial areas** (IC-1 and IC-2)! Two examples of the attached study are provided below. The "V" shape is a result of longer shadows in the early morning and late afternoon when families leave and return from work and school, shortening at noon.
- It is important to note that the addition of **buildings to the west and east of these 5** will result in **further multiple shadow hits** (i.e. yellow, orange and red)
- During this "development moratorium" we already have proposals for 4 of 5 buildings (28 floors-Birch, 40 floors-Pine + 2 transit stations). **Birch and Pine do NOT meet the stated premise of City transit development** that we have seen in other transit locations e.g. Joyce Collingwood, Marine Drive, Oakwood, Langara and King Edward :
  - "transitioning down [height]...from the station [>300']" and
  - "relationship and integration with the surrounding neighbourhood".

- 20+ storey developments **disproportionately negatively impact the Slopes relative to flat or reversed slope areas. Every community deserves equitable, fair and reasonable access to sunlight** for homes, schools, businesses & parks. Do tall Broadway corridor buildings justify the unreasonable and disproportionate loss of sunlight the Slopes will bear.
- **13 storey buildings or less** lining major arteries such as Broadway, Granville, Burrard, Arbutus etc. (similar to the initiative approved by the City to expand 6 floor residential locations in the City) **can provide significant density**. This option is badly under-utilized. Why is it so necessary to jump to residential towers? Paris has achieved 4X the people/sq km density of Vancouver (~21,000 vs. ~5,400) primarily within 6 storeys.
- **This shading issue** associated with this downslope is **documented in the City's Central Broadway C-3A Urban Design Guidelines**. To date, the City has resisted allowing buildings above 12 floors in the Slopes. This City document outlines a number of reasons and, as a result, recommends more modest building heights.
- **Vanplay (2018)** – Parks Plan has highlighted **tall building shadow concerns**: *“Shadows from new buildings ... dramatically change the nature of these green spaces and our enjoyment of them ... balance the need for new buildings while maintaining solar access for our parks and streets...building of increasingly taller structures needs to be carefully considered ... sunshine is a fundamental building block of our parks”*. The ink isn't yet dry on this commitment and already Council may be disregarding it. Further, Parks has indicated the Fairview Slopes area, which the Slopes is part of, is already lacking in park development and will continue as such with increasing density. Does it make sense to develop shadowing on current and future parks?

#### **Recommendations:**

1. **Slopes Official Community Plan**, like the *Central Broadway C-3A Urban Design Guidelines*, needs to **reflect building height <13 floors (~27 floor equivalent to flat terrain)** due to shadow sensitivity.
2. The **strategy to transition height down from Skytrain** stations such as Joyce, Marine Dr., Oakwood, Langara, King Edward **is not apparent** given the locations under consideration such as the 28 floor **Birch and Broadway** and 35-40 floor **Pine and 7<sup>th</sup> buildings**. If these are approved why would City Council single out the shadow sensitive Slope topography for taller transit development? **The 28 & 40 floor buildings being considered must not be allowed to proceed at those heights.**

The question that I would ask **City Planners and City Council** is, **“do you wish part of your legacy to be the permanent shadowing of the Slopes?”**. That may sound dramatic but already four of the five buildings are at some level of proposal and we have not yet “started” the development process under the new Official Community Plan. If these are approved at 20+ floor heights this is likely the beginning not the end. The major shadow concerns outlined herein will be modest compared to what could be as the developers get approval to fill in the “picket fence” of tall buildings along the Broadway ridge.

**Data Efficacy:** All shadow data used herein was confirmed to be correct relative to developer representations.

**Shadow Data:** The shadow data was generated by a program called Sketchup 2019. The satellite map version was not used as, while it includes the actual buildings, they are dark and difficult to read. Additionally, all the shadows are as at the time the satellite photo was taken so are not representative of any shadows used herein other than the specific building.

All 20, 30 and 40 storey (200, 300 and 400 feet as proxy) buildings had floor plates of 100 X 100 feet and are Geolocated to their specific location. They are generic and not representative of any building in particular. That said, a shadow analysis was completed by the developers for the Birch and Broadway, 7<sup>th</sup> and Pine and Vanness and Joyce buildings and compared to the shadows generated from Sketchup.

It was confirmed that the shadows from Sketchup are virtually identical to those provided by the three different developers (Note: the June Pine and 7<sup>th</sup> study was compared as the shadows in the balance of the developer's study results go beyond every slide graphic i.e. you could not ascertain the end of the shadow. Also, the Vanness and Joyce developer analysis had a time error as the developer did not take into account Daylight Saving Time).

In addition, all shadows are based on Coordinated Universal Time (UTC) for Vancouver which is -700 hrs for October as it is still in Daylight Saving Time. The other 4 months are out of DST so carry a UTC of -800 hrs. Finally, the topography of the location was included to ensure shadows generated cast onto the topography specific to the shadow coverage maps i.e. the Burrard Slope

Elevation and Area Coverage Data: This data comes from Daft Logic Mapping using Google Maps. This mapping tool delivers reasonably accurate elevation and area calculations used. The elevation data was used on the Elevation Map and area data was used wherever area calculations are provided.





YYY' - DIFFERENCE NTOS (INDICATIVE OF SLOPE)

HEIGHT OF RIDGE INCREASES WEST TO EAST

Slight Decrease

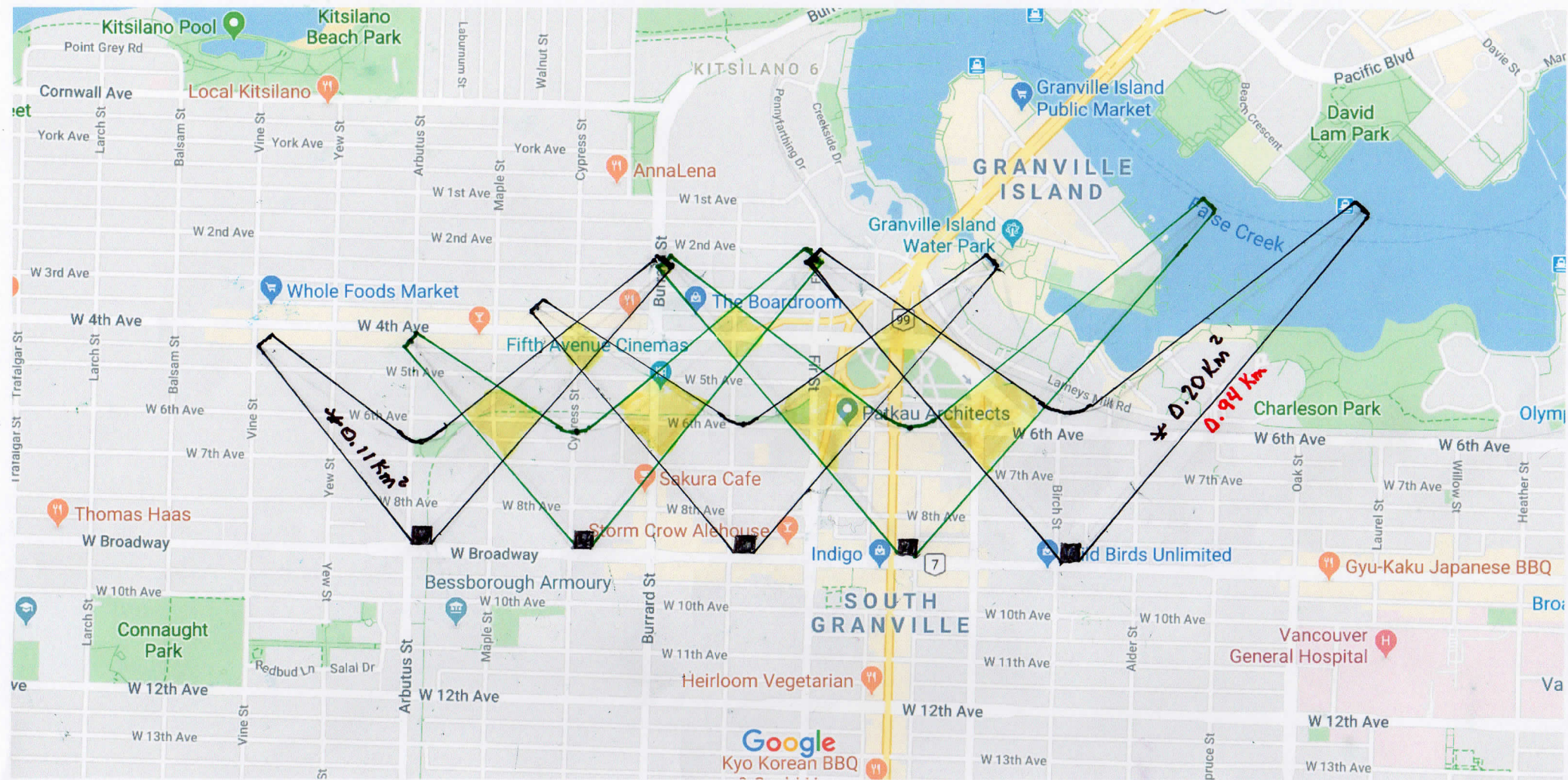
RELATIVE  
RIDGE  
SLOPE

MINIMUM  
(FURTHER FROM THE  
WATER)

MEDIUM  
(HIGHER AND CLOSER  
TO WATER)

MAXIMUM  
(DIRECTLY S OF  
WATER)





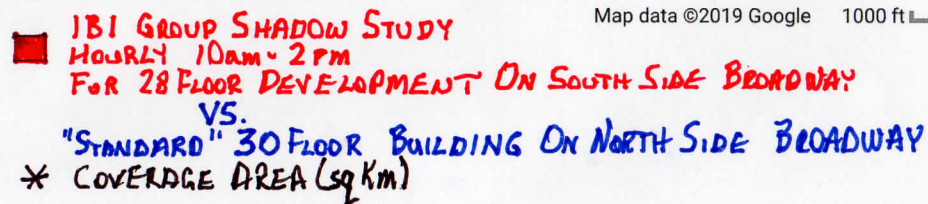
Map data ©2019 Google 1000 ft

\* COVERAGE AREA (sq km)

Each "V" indicate areas covered by shade at some point during the day.  
 Yellow highlight areas hit by shadows 2 times from different buildings.  
 Total daily sunlight 8:11.

Time frame: 9:05 am to 316 pm

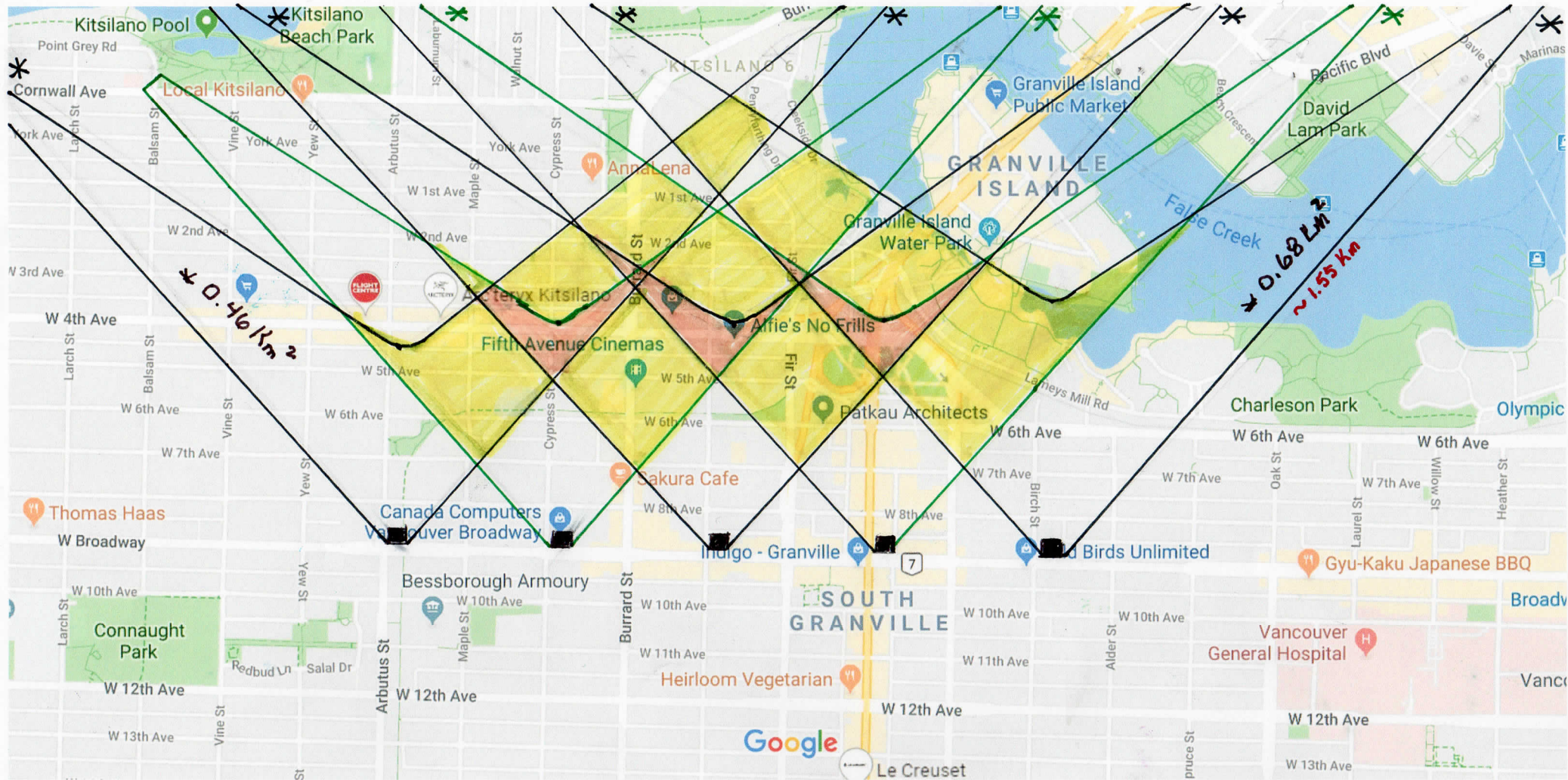




Time Frame: 9:05 am to 3:16 pm



DEC 21: 40 FLOORS



Map data ©2019 Google 200 m 

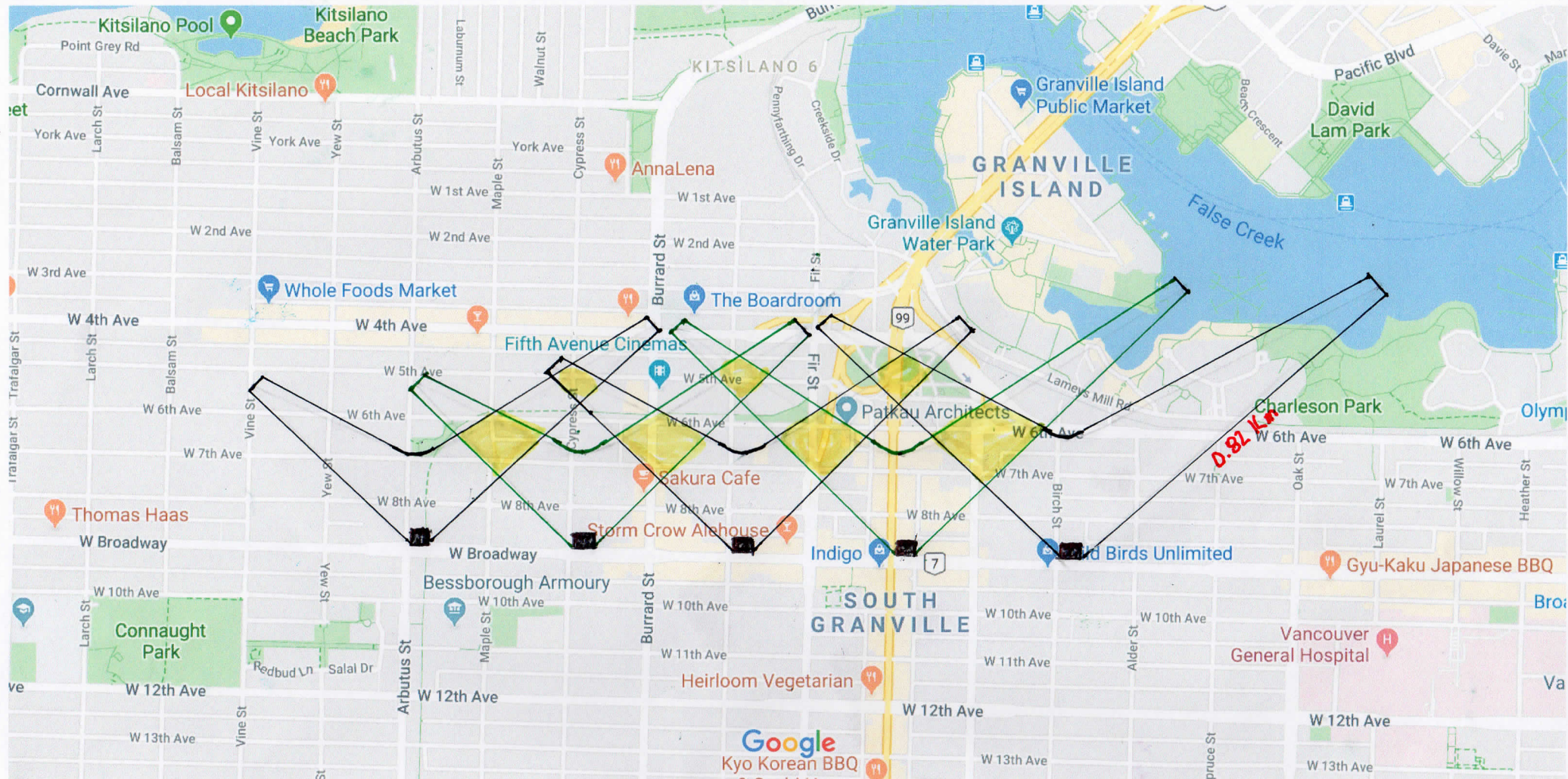
**BEYOND MAP**  
**\* (INCLUDES SOME ESTIMATION)**

\* COVERAGE AREA (sq Km)

Each "V" indicate areas covered by shade at some point during the day. Yellow & orange highlight areas hit by shadows 2 & 3 times, respectively, from different buildings. Total daily sunlight 8:11.

Time Frame: 9:05 am to 3:16 pm



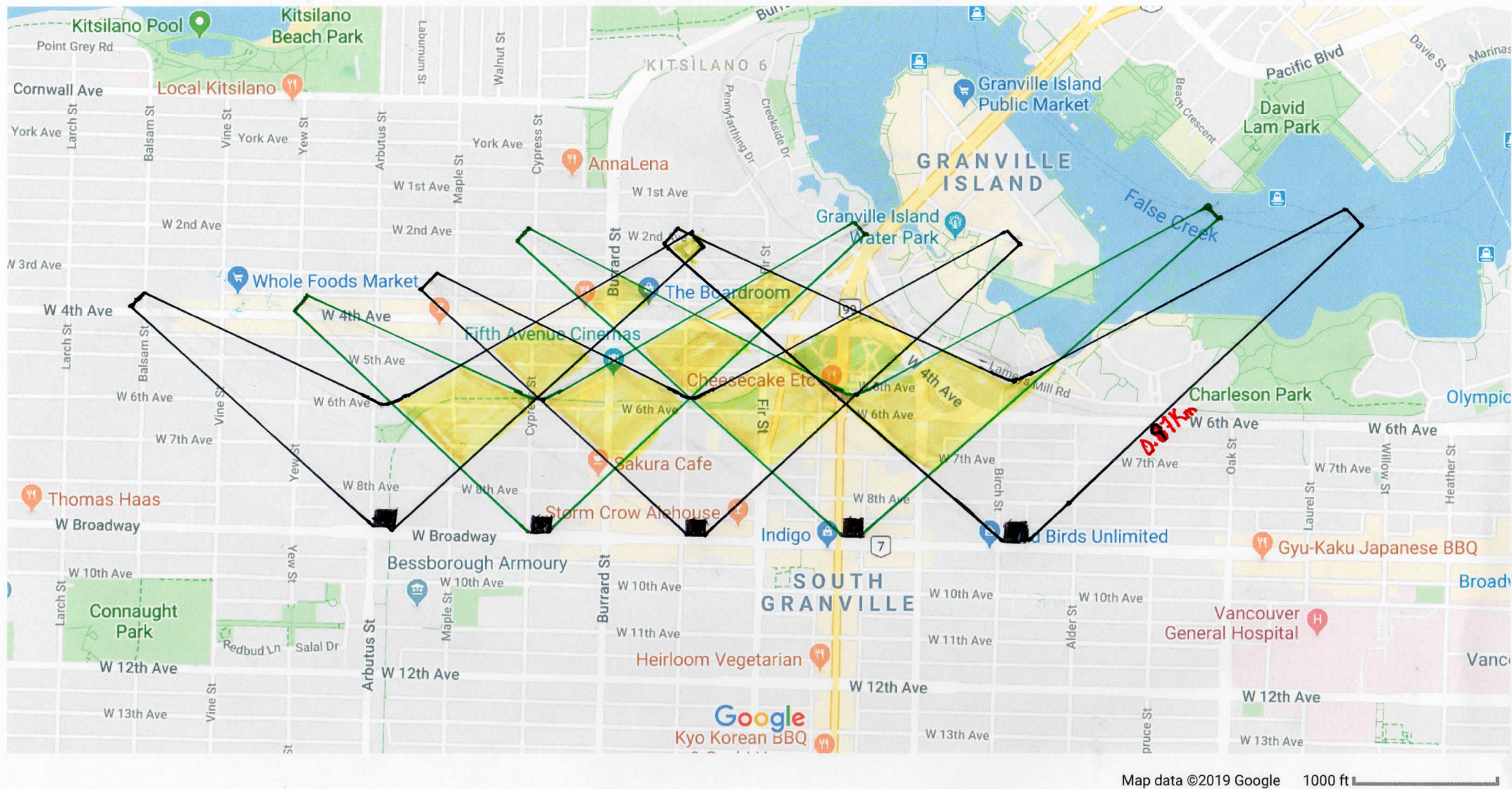


Map data ©2019 Google 1000 ft

Each "V" indicates areas covered by shade at some point during the day.  
Yellow highlights areas hit 2 times by different buildings. Total daily sunlight  
8:53.

Time Frame: 8:58 am to 3:49 pm

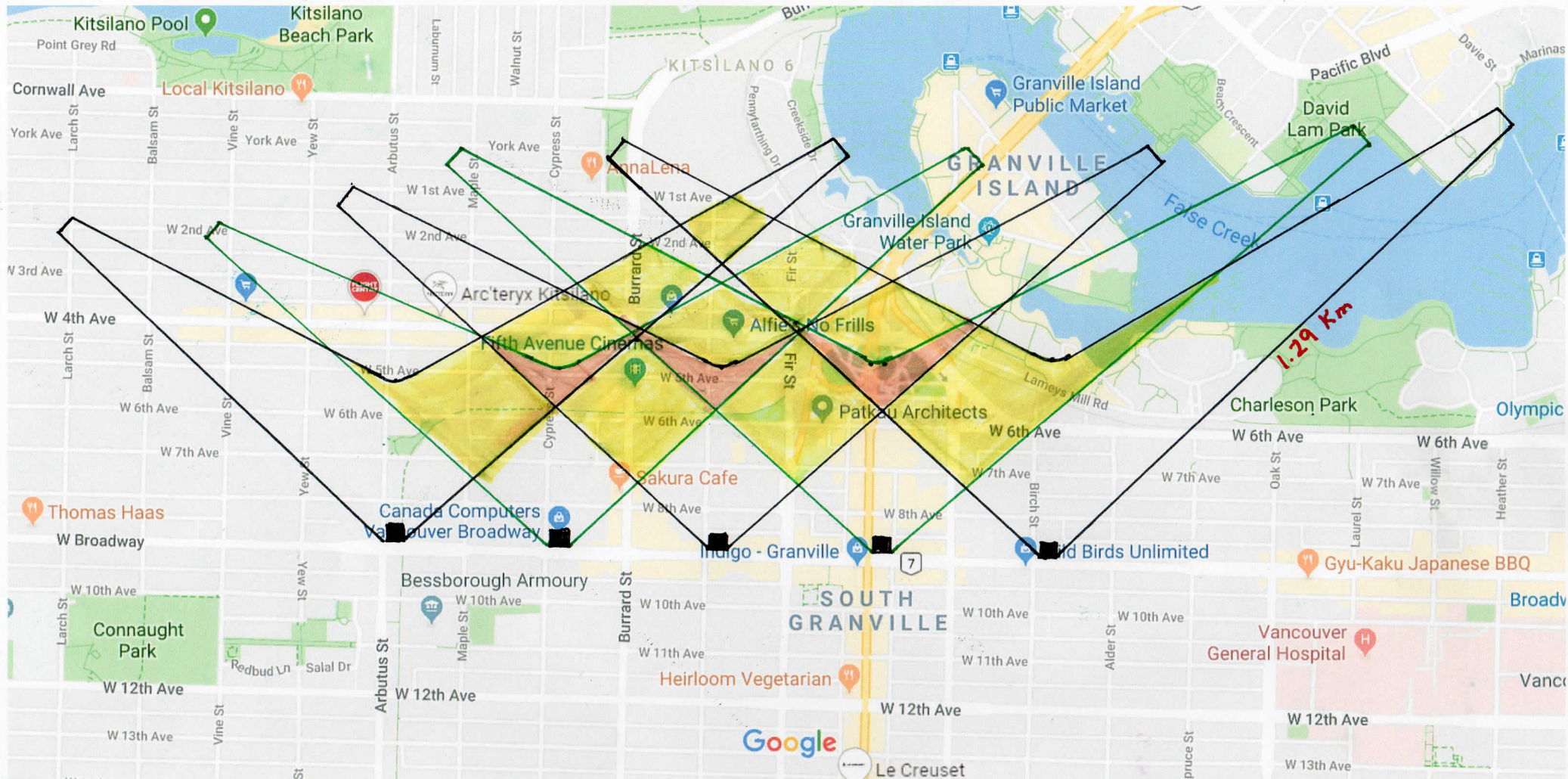




Each "V" indicate areas covered by shade at some point during the day. Yellow & orange highlight areas hit 2 & 3 times, respectively, by different buildings. Total daily sunlight 8:53.

Time Frame: 8:58 am to 3:49 pm

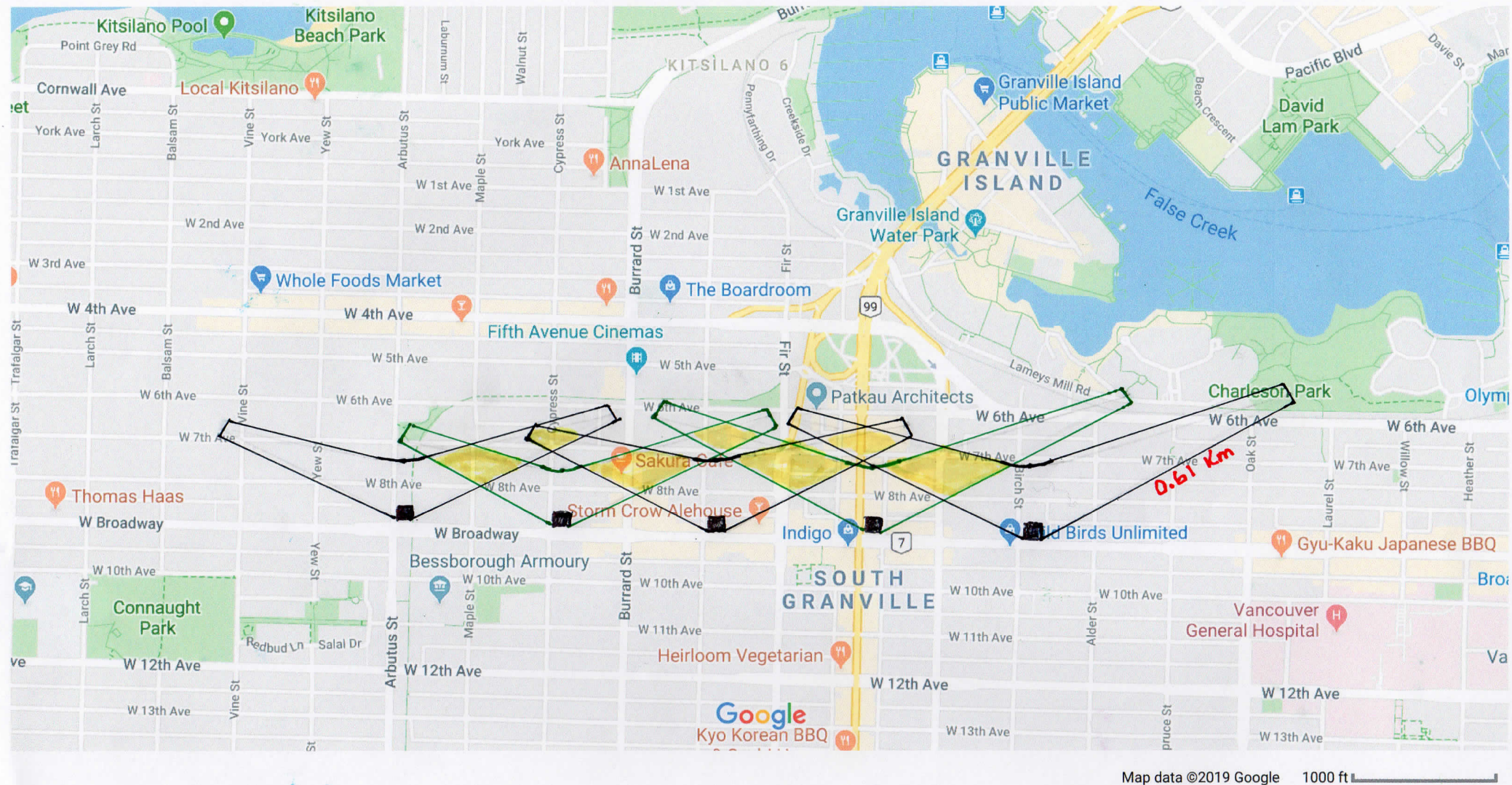




Each "V" shows area covered by shade at some point during the day.  
 Yellow & orange show areas hit 2 & 3 times, respectively, by different  
 buildings. Total Daily Sunlight 8:53

Time Frame: 8:58 am to 3:49 pm

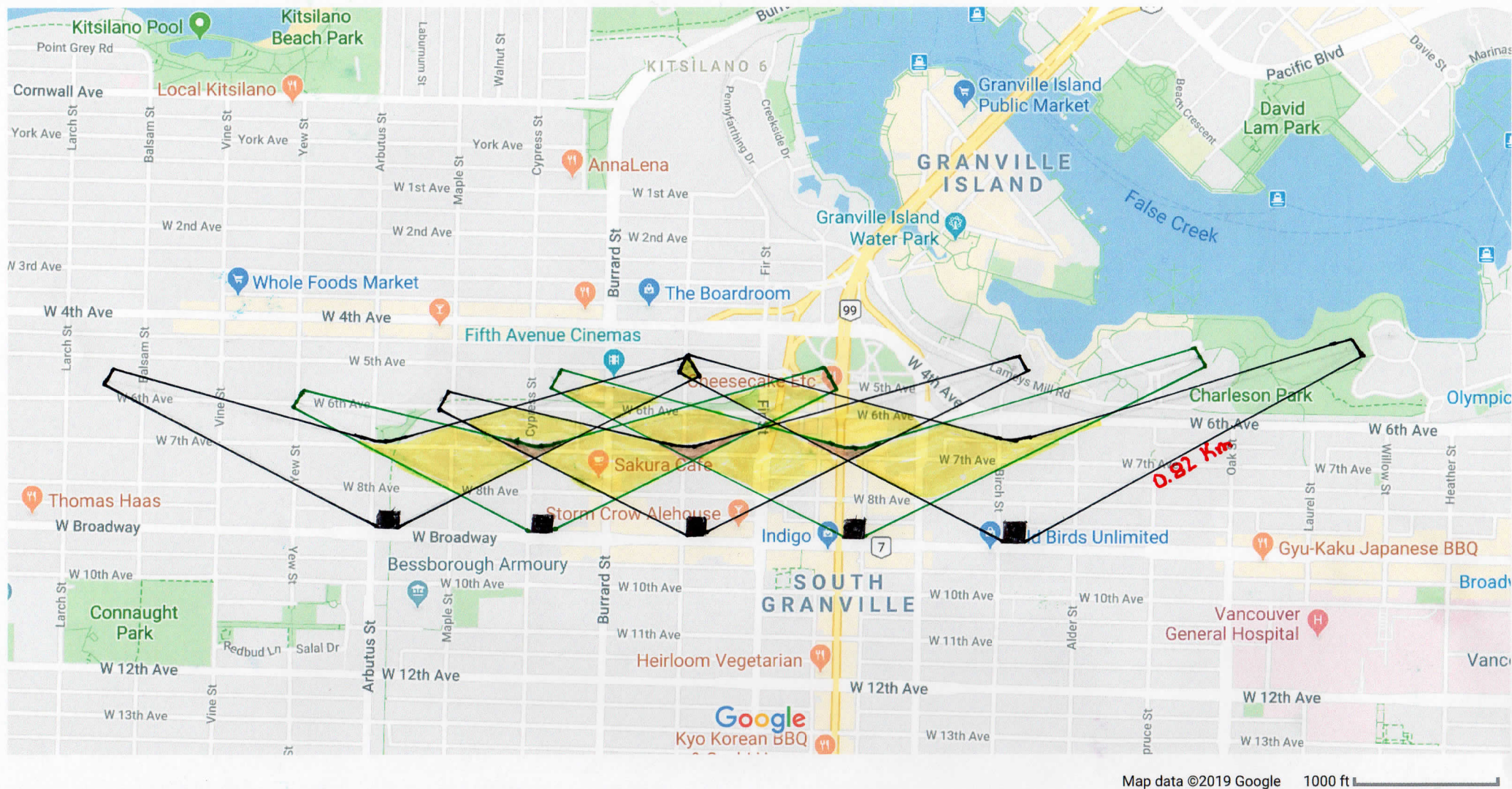




Each "V" indicate areas covered by shade at some point during the day.  
 Yellow highlight areas hit by shadows 2 times from different buildings.  
 Total daily sunlight 10:30.

Time Frame: 8:11 am to 4:41 pm

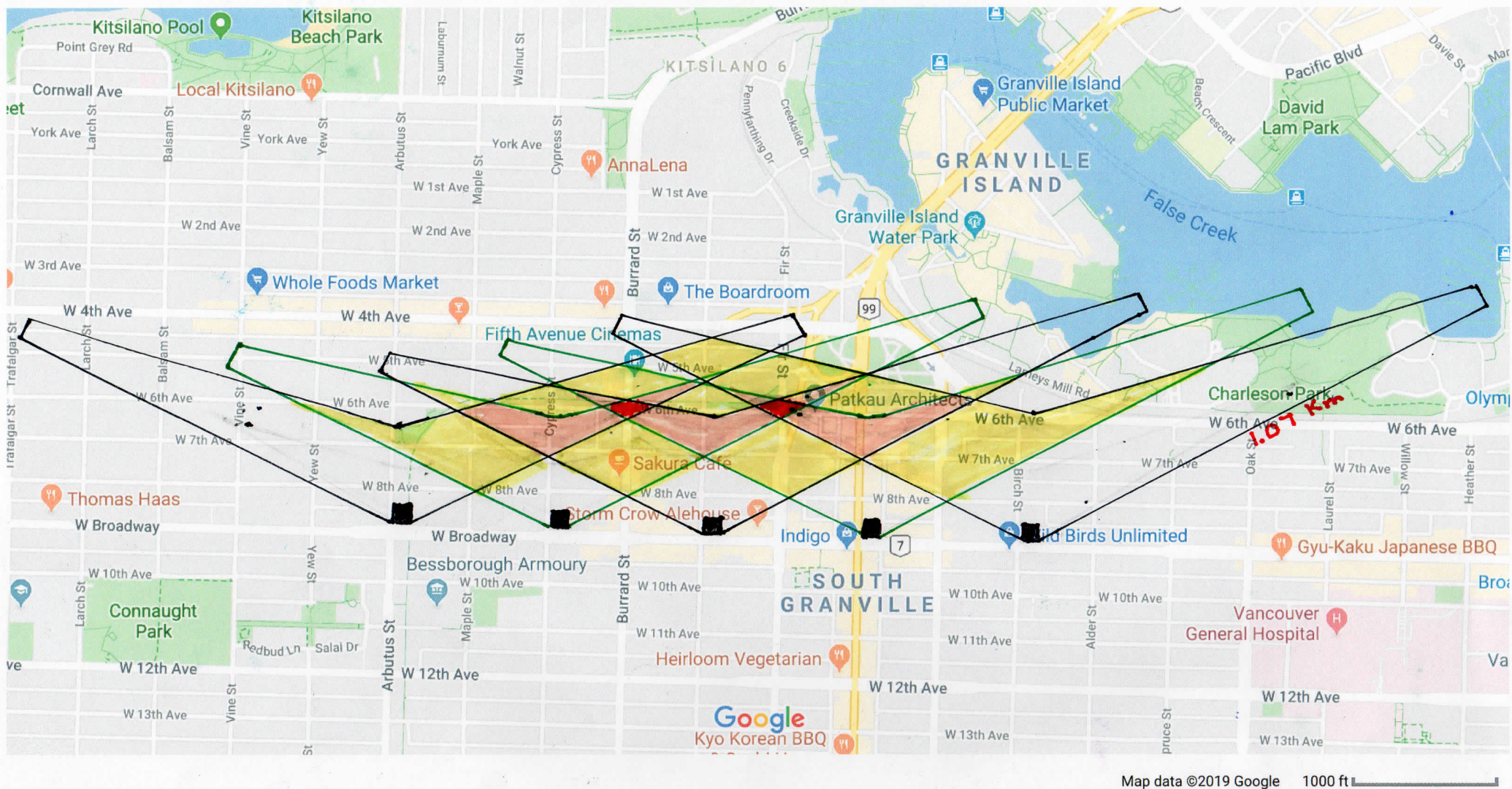




Each "V" indicate areas covered by shade at some point during the day. Yellow & orange highlight areas hit by shadows 2 & 3 times, respectively, from different buildings. Total daily sunlight 10:30

Time Frame: 8:11 am to 4:41 pm

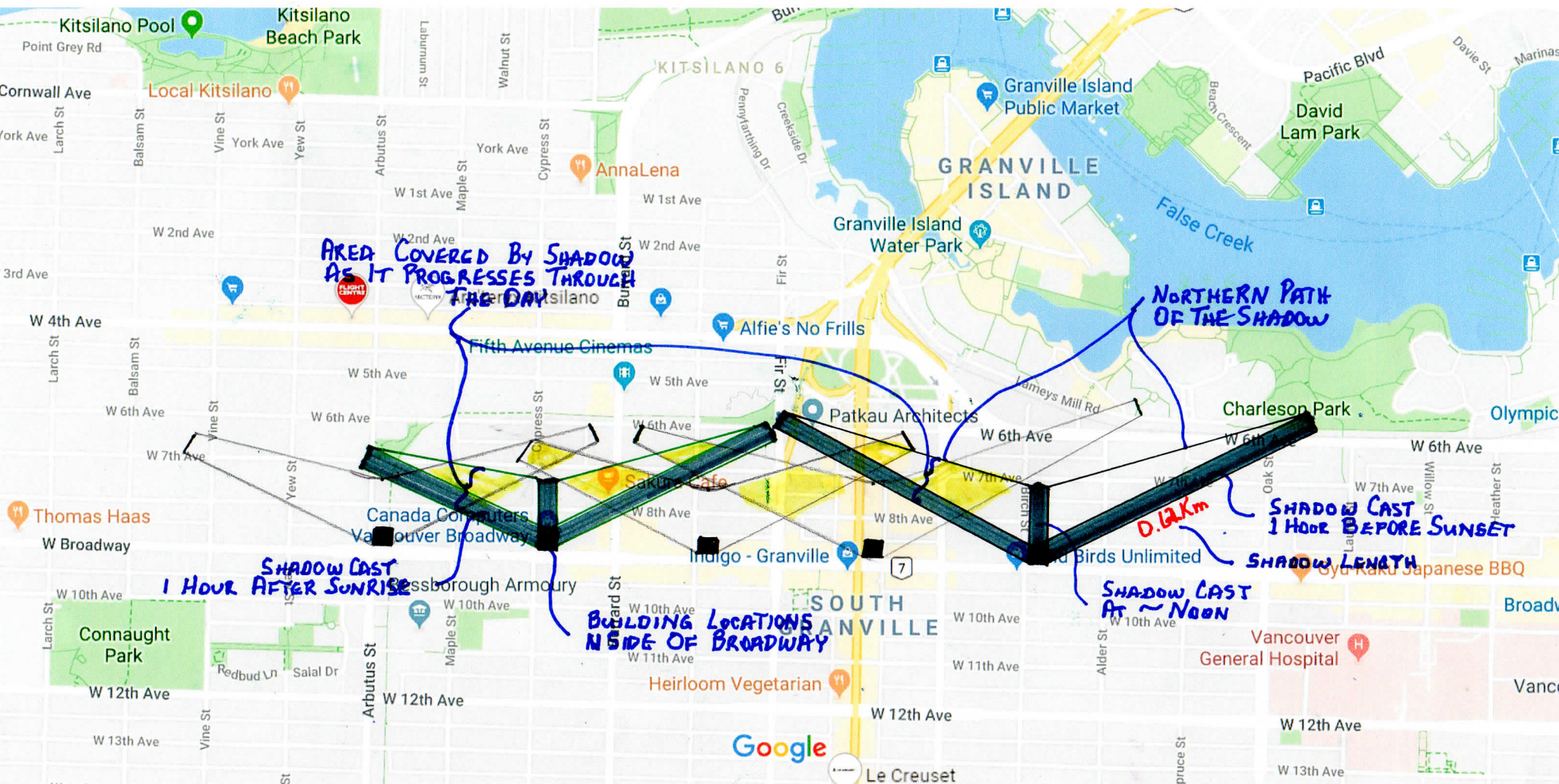




Each "V" indicate areas covered by shade at some point during the day. Yellow, orange & red highlight areas hit by shadows 2, 3 & 4 times, respectively, by different buildings. Total daily sunlight 10:30.

Time Frame: 8:11 am to 4:41 pm





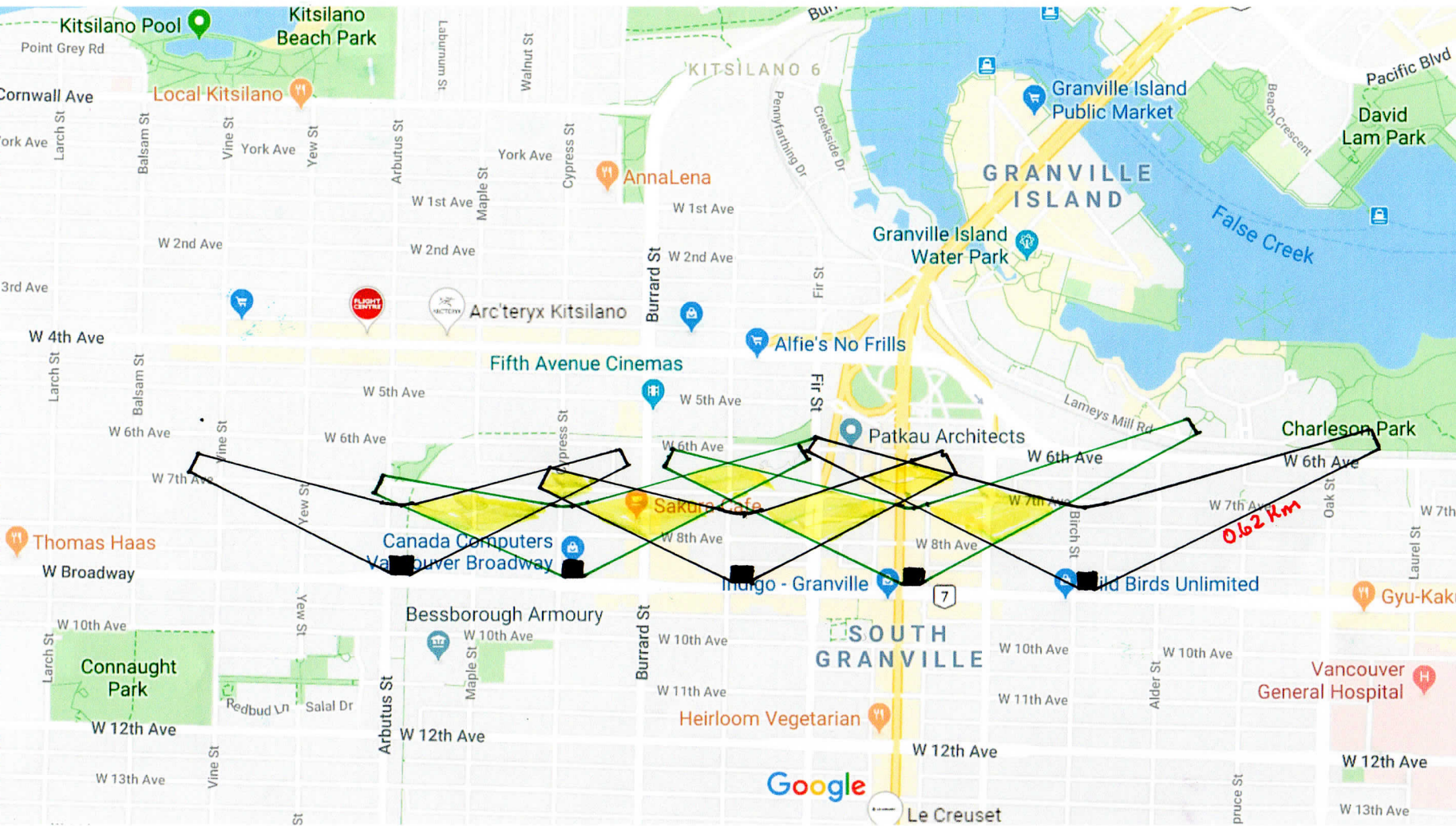
Map data ©2019 Google 200 m

This slide provides a description of the meaning of all the elements of the shadow maps.

	SHADED BY 2 BUILDINGS EACH DAY AT VARIOUS TIMES
	" " 3 " " " " " "
	" " 3 " " " " " "

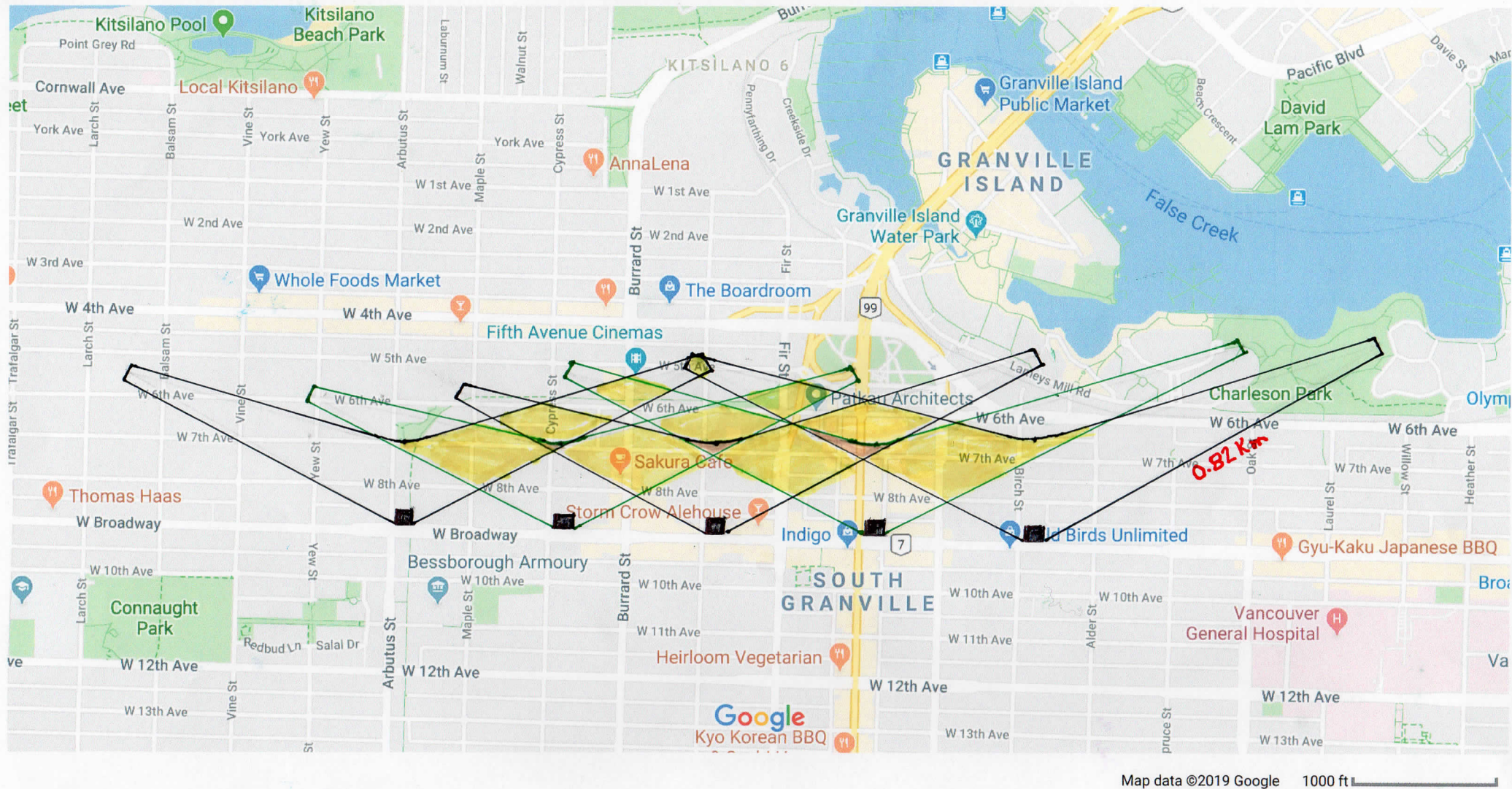
SKETCHUP SHADOW ANALYSIS INCLUDED:  
 GEOLOCATION - SPECIFIC TO EXACT STREET ADDRESS  
 TIME - SPECIFIC TO EXACT COORDINATED UNIVERSAL TIME (UTC) FOR VANCOUVER  
 - NOTE DAYLIGHT SAVING TIME WAS ACCOUNTED FOR (OCTOBER ONLY)





Time Frame: 8:42 am to 5:10 pm

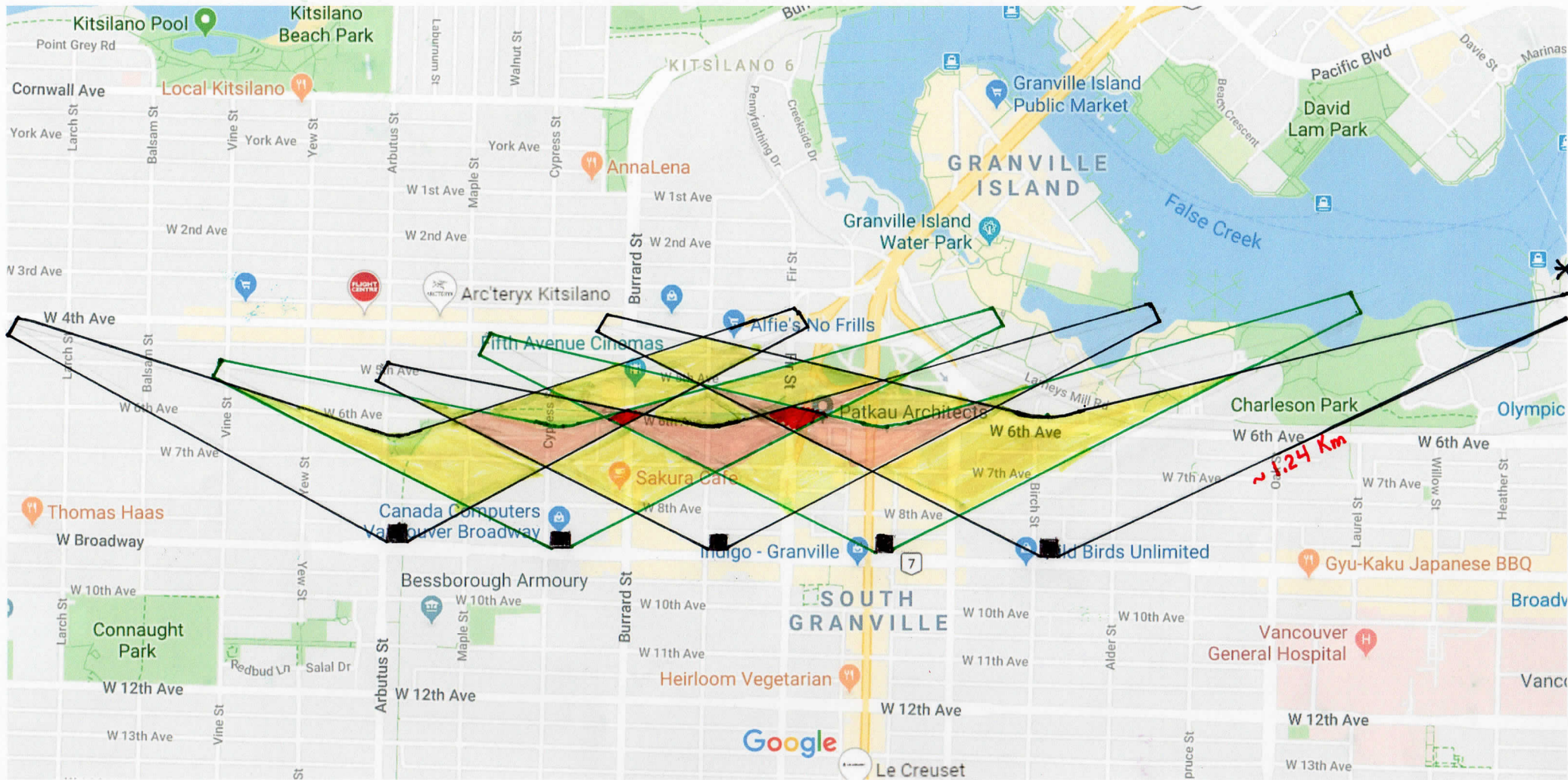




Each "V" indicate areas covered by shade at some point during the day.  
 Yellow & orange highlight areas hit by shadows 2 & 3 times, respectively,  
 from different buildings. Total daily sunlight 10:28.

Time Frame: 8:42 am to 5:10 pm





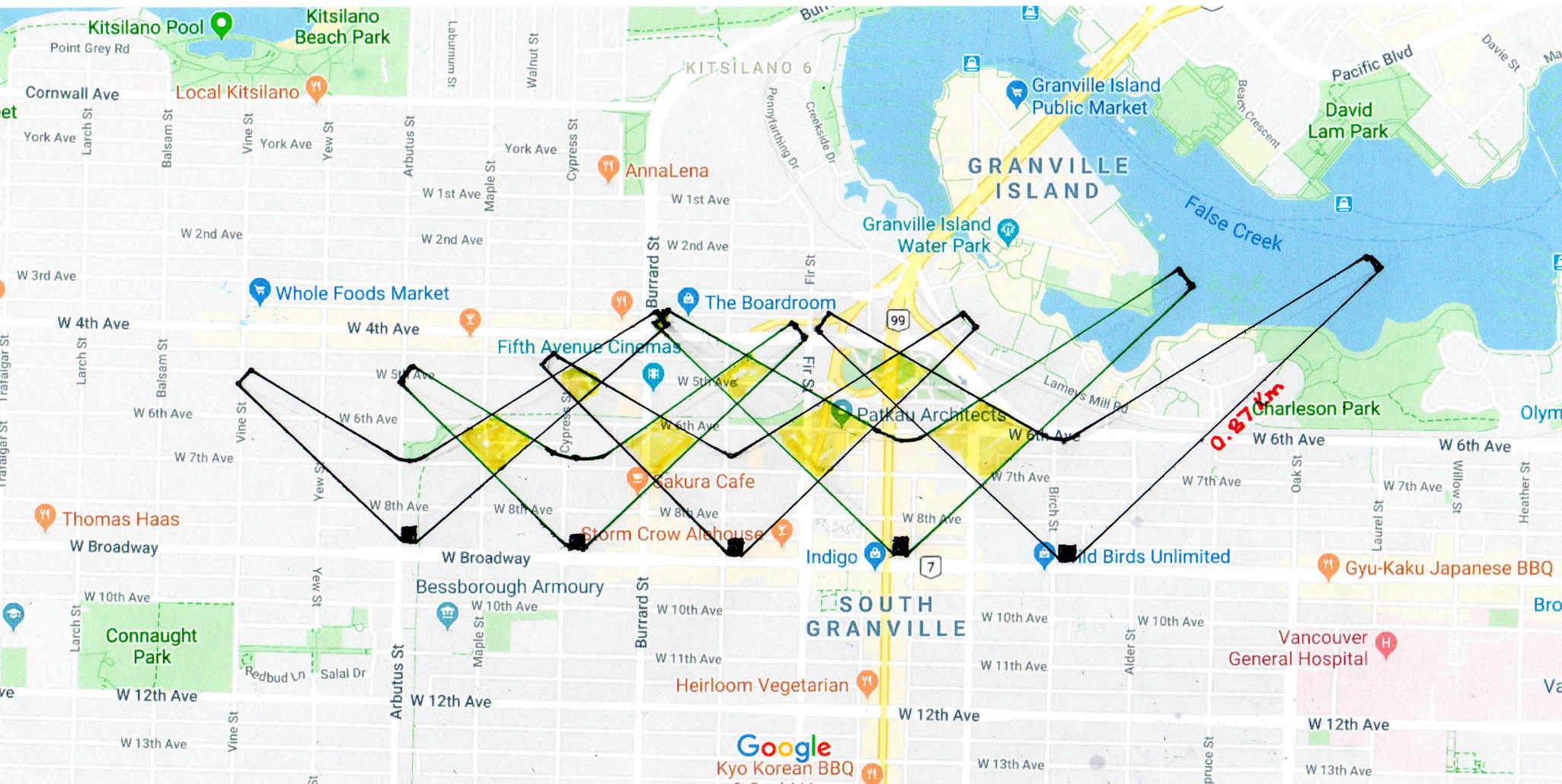
Map data ©2019 Google 200 m

\* BEYOND MAP  
(INCLUDES SOME ESTIMATION)

Each "V" indicate areas covered by shade at some point during the day. Yellow, orange & red highlight areas hit by shade 2, 3 & 4 times, respectively, from different buildings. Total daily sunlight 10:28.

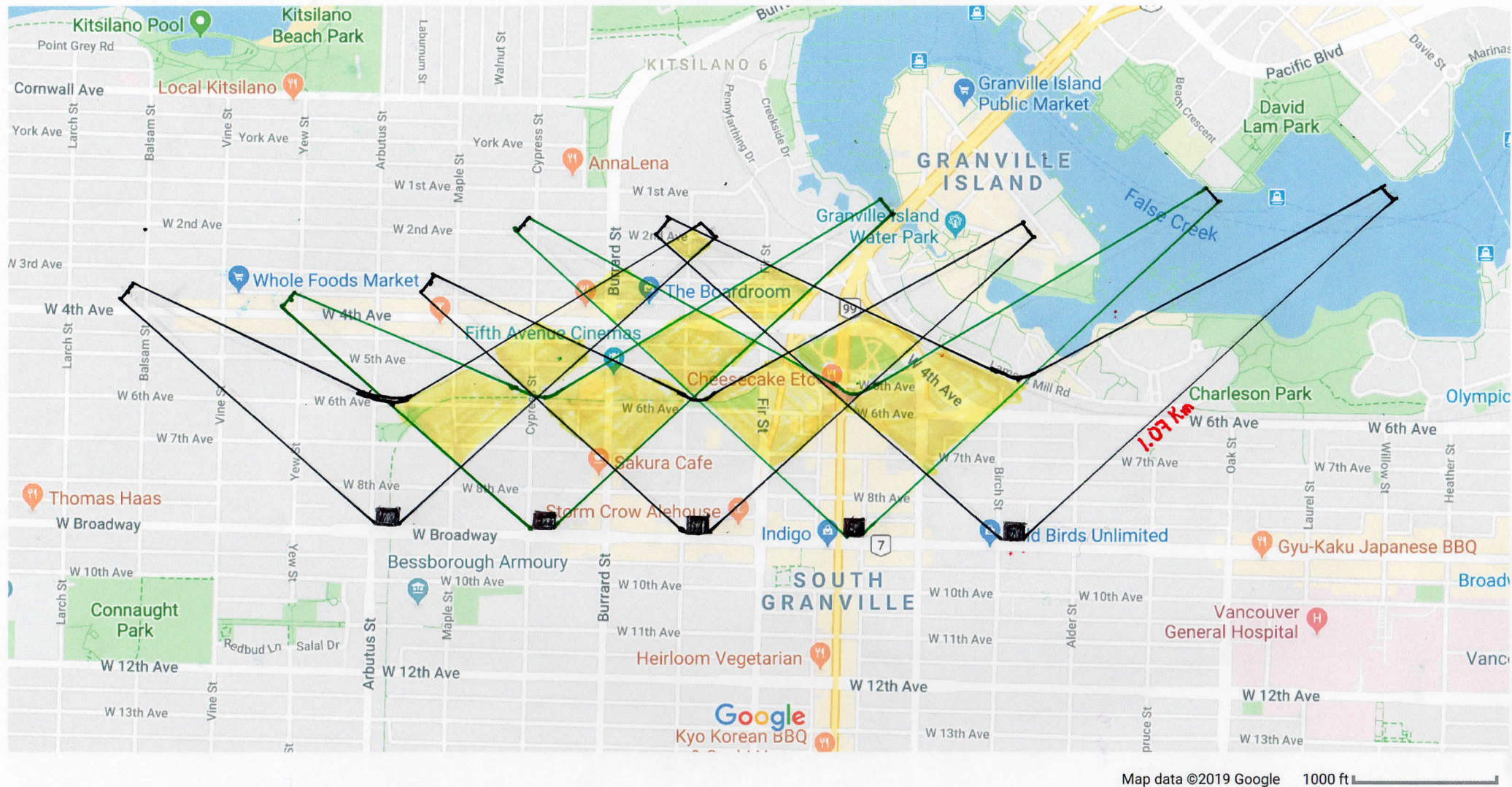
Time Frame: 8:42 am to 5:10 pm





Time Frame: 8:32 am to 3:24 pm

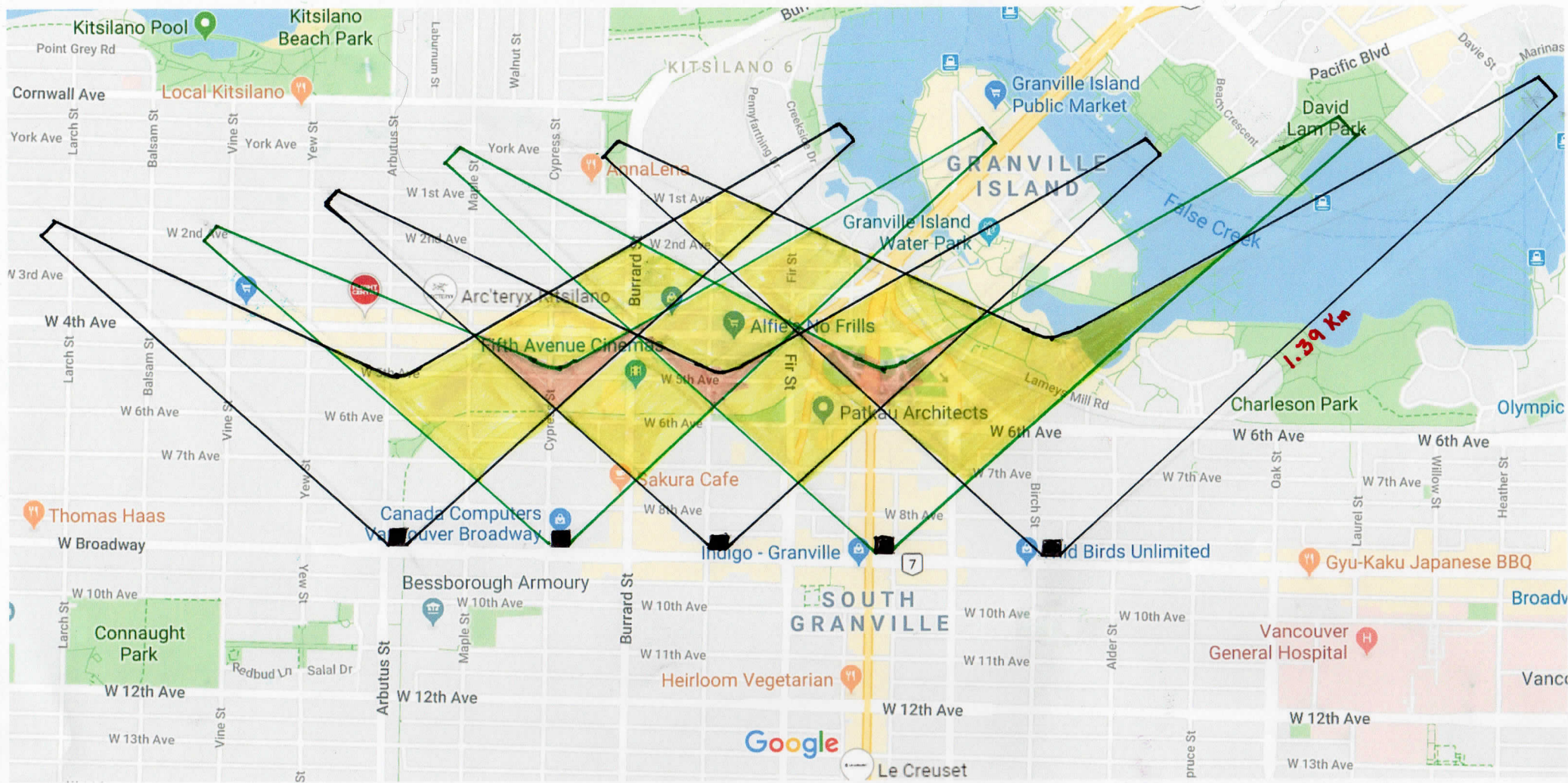




Each "V" indicate areas covered by shade at some point during the day.  
 Yellow highlight areas hit by shadows 2 times from different buildings.  
 Total daily sunlight 8:52.

Time Frame: 8:32 am to 3:24 pm





Each "V" indicate areas covered by shade at some point during the day.  
 Yellow & orange highlight areas hit by shadows 2 & 3 times, respectively,  
 from different buildings. Total daily sunlight 8:52

Time Frame: 8:32 am to 3:24 pm