Innis Arden Policy - Neighbor Sign Off Distance and Methodology Change Proposal

Link to List of Neighbor Sign Off Properties

1.1. Why: The Board of Directors review of any new structure or improvement starts with a required presentation of plans to adjacent and affected peripheral properties and solicitation of their feedback. The peripheral properties determined by the current 250 foot rule(within 250 feet of any portion of the lot) is,

a. Difficult to accurately and easily determine(Here is the current link to a measuring tool on the Residents B&R.)
b. Often too broad to include properties that have no view impact and therefore are too onerous on the applicant and too narrow for those to the east or "uphill" whose view is impacted. The current definition does have an east/west bias which is generally helpful to the east of the applicant property given that most properties in Innis Arden run east/west but we can improve on this by always intentionally applying directionality excluding those few properties that clearly do not impact view as defined by the covenants.
c. By making the neighbor approval process more clear, relevant and less onerous, applicants will be less likely to fall short of meeting the full requirement either by not presenting the necessary properties as required or being less motivated to track down more difficult to get a hold of neighbors or more importantly taking the risk of carrying out a board approval required project without permission at all.

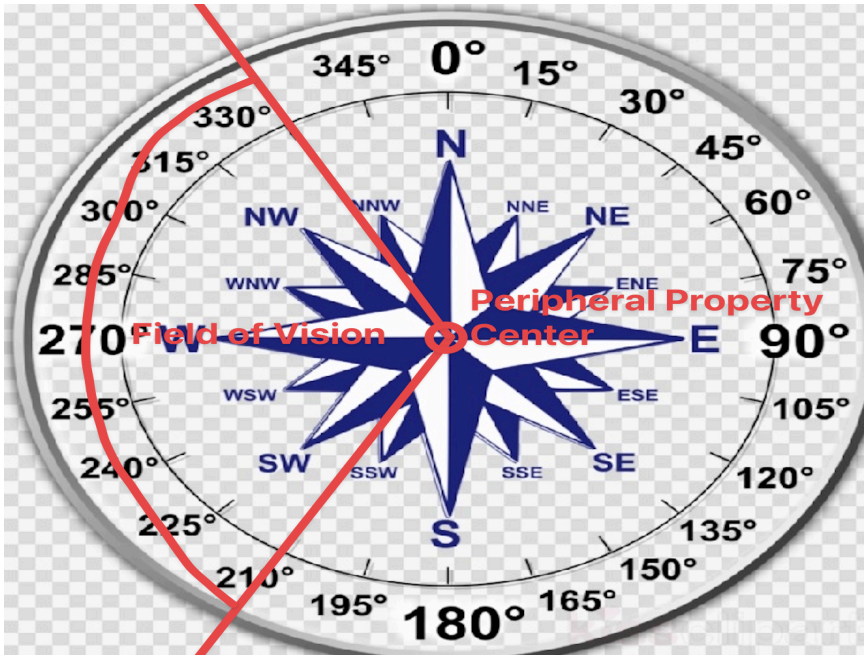
1.2. Proposed Solution: Change the existing single 250 foot requirement to a two tiered approach of 240 feet from the center point of the existing application structure to the center point of adjacent structures in addition to a 360 foot radius for those properties whose applicant compass bearing is 120 degrees from due West(between 210 and 330 degrees) from their center point for properties not excluded from the view covenants. For outlier properties, a minimum of five of the closest neighbor properties are required.

- **1.3. Expected Outcomes:** This change will increase the percentage of relevant view impacted peripheral neighbor sign off properties while modestly reducing the overall signoff burden for review. More importantly the methodology change will allow for an easily reproducible and accessible list of required signoff properties for every lot in Innis Arden. This list will serve as a starting point for building and remodel to improve the digitalization, transparency and automation of the B&R application process and allow for potentially impacted owners to easily answer the question of if their sign off should be solicited.
- In a comparison of nine actual past signoff applications with a total of 93 neighbor signoffs, 69 signoffs would be required with the new methodology or ~74% of the prior total. Eight of the applicants would have less signoffs needed, one would have more. It should be noted that the one needing more was due to a combination of the new methodology and clearly coming short of the required properties for the old methodology. See appendix 2. "Applicant Neighbor Signoff Property Prior vs Proposed Method Table".
- Properties that are entirely excluded from the view covenants will need to meet the 240ft distance from center to center point adjacent property requirement but will not need to meet the additional 360ft requirements for properties to their east. There are 60 entirely

excluded properties(those without partial exclusion provisions), three in Innis Arden 1 and 57 in Innis Arden 3. See appendix 1. “Fully Excluded Properties From the Innis Arden Tree Covenants”.

- Roughly in practice given that the average frontage of an Innis Arden property is around 100 ft, this change from 250ft “edge to edge” to 240ft “center of structure to center of structure” will be a 20% reduction in distance (240ft - 100ft /2) “width wise”. Depth wise will vary more given front or back of lot structure placements, but the 360ft for those properties with the applicant property in their field of view will more often than not be greater than the existing 250ft rule with an average Innis Arden lot depth of 150 to 180 ft.
- There are seventy seven properties or 14% of the Innis Arden lots that don’t have a minimum of five peripheral properties with this new definition. These applicant properties will be required to get signoff from the five closest properties. This minimum was subjectively arrived at by looking at peripheral properties that met this criteria and finding a common sense definition of adjacent properties as well deciding on a community feedback minimum.
- **1.4. Data Considerations:** The current methodology of determining the distance from any point on the applicant's property to any point on a peripheral property is not practically reproducible at scale given that there are near infinite point to point distances to consider along the different property boundaries.
    - The proposed roofline center point to roofline center point method is the best alternative given that the data is publicly available, rarely changes and is easy to update and produce. The property coordinates are drawn from the King County GIS Open Data Portal’s “Parcels for King County with Address, Property and Ownership Information” dataset.
    - The distances are determined by the shortest distance on the surface of an ellipsoidal model of the earth without respect to altitude differences.
    - The absolute or compass bearing from the peripheral property to the applicant property is achieved by taking the angle of the coordinate pairs and converting them into 0-360 degrees. See appendix 3 “Absolute Bearing Calculation”.

- **1.5. Peripheral 360ft for potentially impacted property considerations:** The additional distance requirement for neighboring properties that for which the applicant property bears 120 degrees from due west or from 210 degrees to 330 degrees was chosen because it covers a generous portion of the western half of a given properties outlook. Concerns of view coordination with adjoining properties should be covered by the base 240ft radius requirement. The new circle for the applicant property will be more of an oval stretched out to 360ft to the NE, E and SE. See the approximate inner 240 ft radius circle and 360 ft oval example below for 17445 14th AVE NW.



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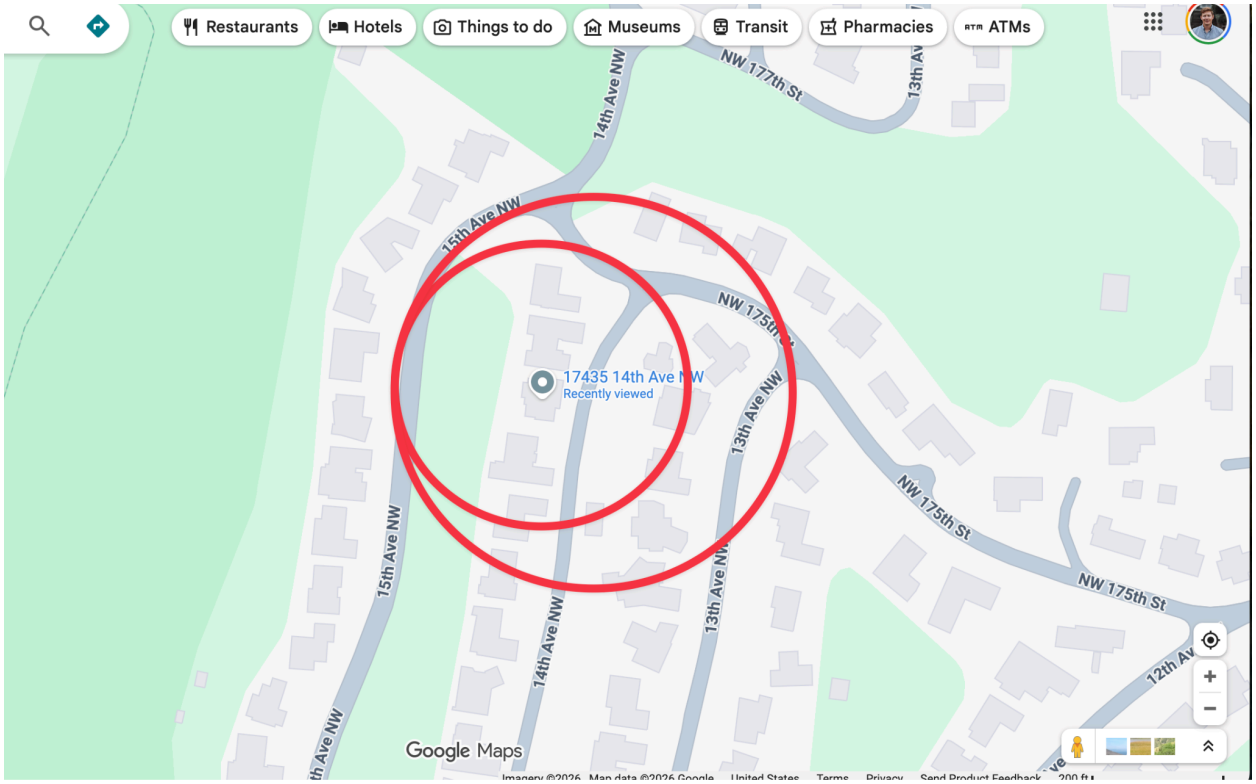

2. Practical visual examples and graphs of the proposed methodology versus the existing methodology demonstrate a generally similar but more normalized set of required sign off properties biased to the east.

- **2.1.** A map example of a recent view impacting an applicant on 14th versus now needing ten signoffs versus eighteen.

Proposed Method

Applicant Address	Approval Address	Distance in ft	Distance Rank	Absolute Bearing
17435 14TH AVE NW	17445 14TH AVE NW	84.121349	1	196.807263
17435 14TH AVE NW	17425 14TH AVE NW	120.547667	2	21.740824
17435 14TH AVE NW	17455 14TH AVE NW	168.152735	3	181.234299
17435 14TH AVE NW	17415 14TH AVE NW	193.010056	4	15.364752
17435 14TH AVE NW	17259 13TH AVE NW	207.337942	5	277.475011
17435 14TH AVE NW	17257 13TH AVE NW	211.077034	6	302.924101
17435 14TH AVE NW	17241 13TH AVE NW	251.214398	7	321.70297
17435 14TH AVE NW	17281 13TH AVE NW	284.281217	8	260.12306
17435 14TH AVE NW	1328 NW 175TH ST	325.221013	9	210.706686
17435 14TH AVE NW	1320 NW 175TH ST	340.842476	10	223.528135

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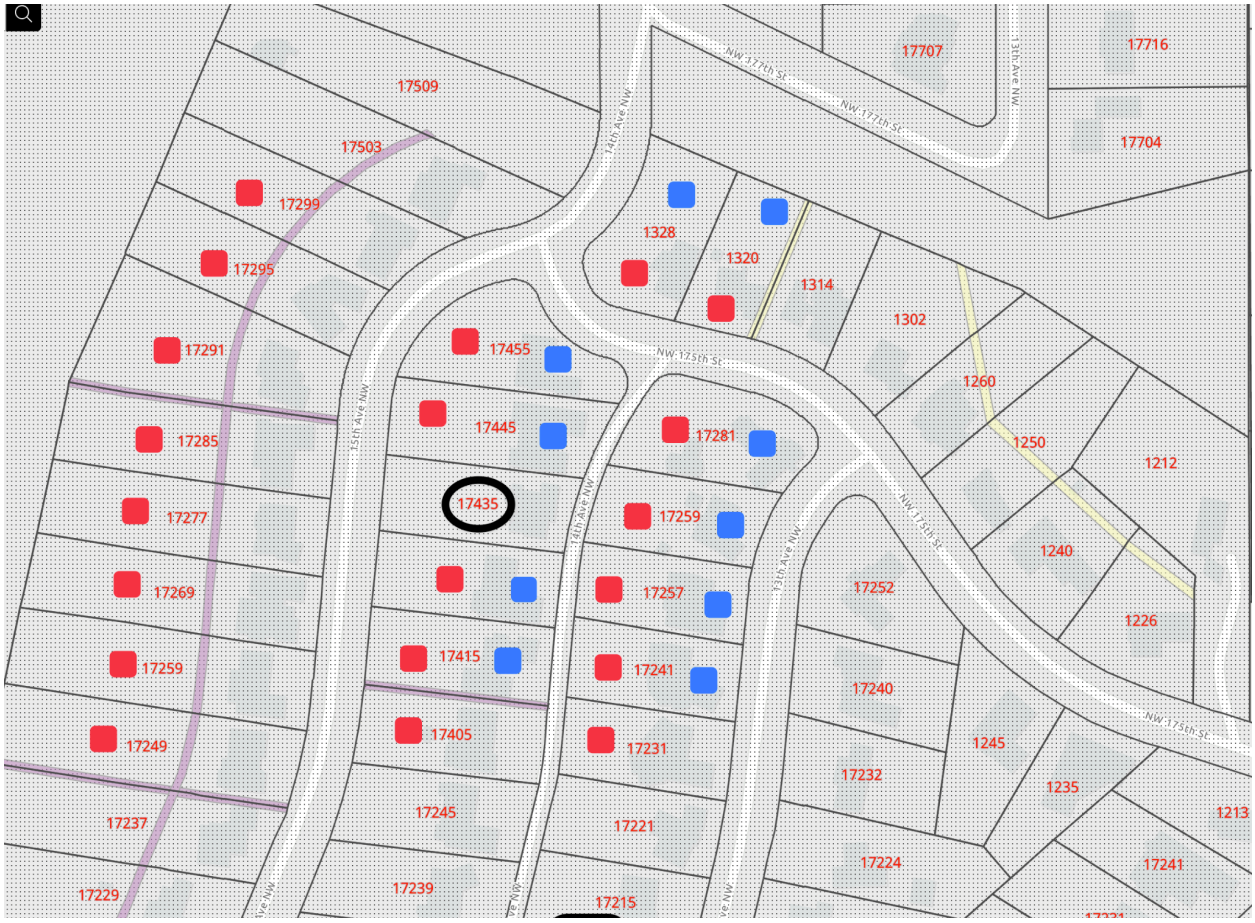
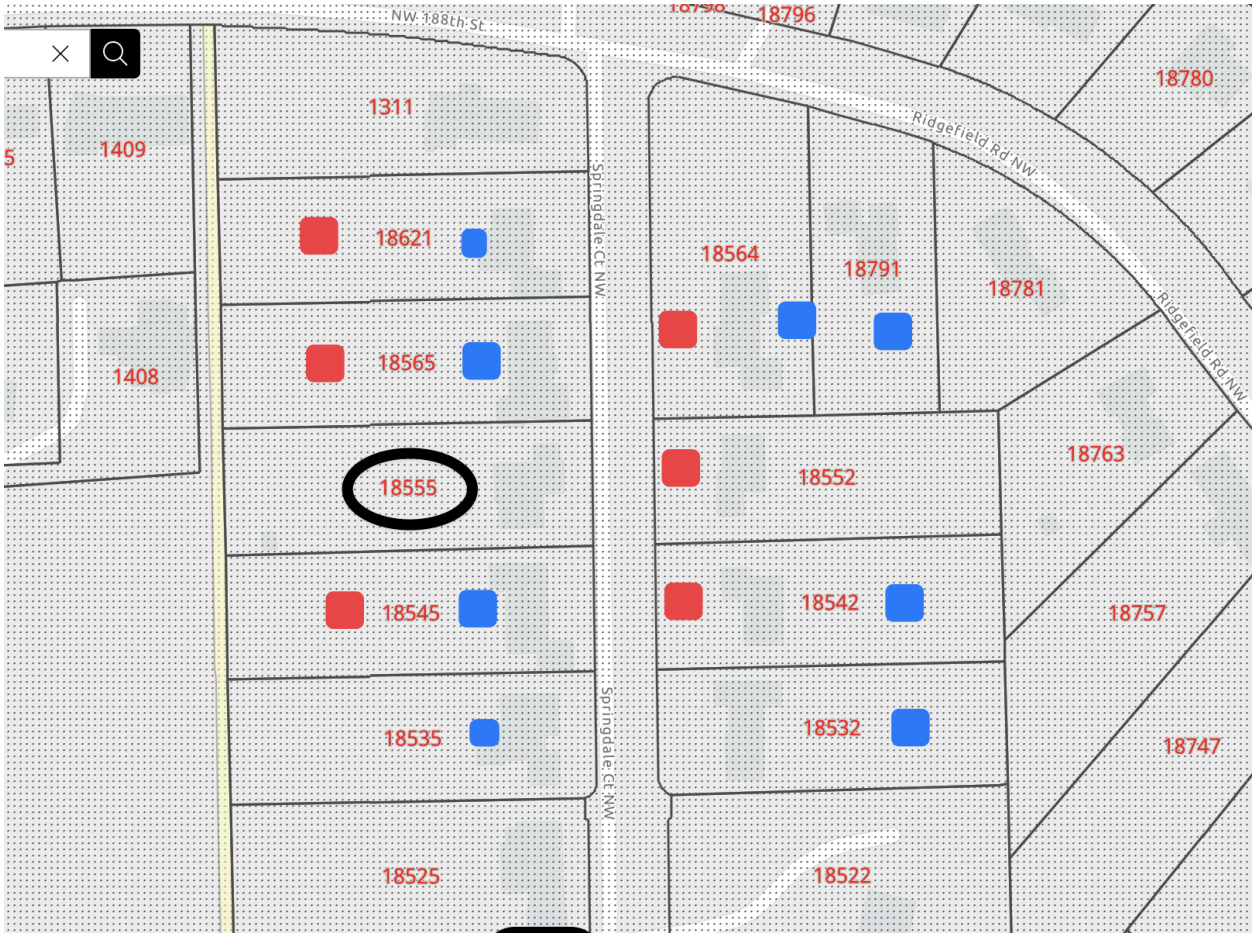


- The red blocks show the old signoff required properties and the new in blue. The property below the applicant property, 17285 15th Ave NW may have been beneficial to get feedback from but as you can see the new requirement biases to the east, closer to structures versus boundaries and is less onerous on the applicant while still covering the most potentially view impacted properties.
    - An example showing 18555 Springdale CT NW needing nine instead of six signoffs.

Applicant Address	Approval Address	Distance in ft	Distance Rank	Absolute Bearing
18555 SPRINGDALE CT NW	18565 SPRINGDALE CT NW	85.38021	1	184.217851
18555 SPRINGDALE CT NW	18545 SPRINGDALE CT NW	99.003612	2	358.856193
18555 SPRINGDALE CT NW	18552 SPRINGDALE CT NW	181.144851	3	266.628263
18555 SPRINGDALE CT NW	18535 SPRINGDALE CT NW	193.050303	4	0.040025
18555 SPRINGDALE CT NW	18621 SPRINGDALE CT NW	197.021184	5	178.276981
18555 SPRINGDALE CT NW	18542 SPRINGDALE CT NW	220.126607	6	297.119008

18555 SPRINGDALE CT NW	18564 SPRINGDALE CT NW	227.875192	7	230.540717
18555 SPRINGDALE CT NW	18532 SPRINGDALE CT NW	269.159844	8	317.253686
18555 SPRINGDALE CT NW	18791 RIDGEFIELD RD NW	338.211745	9	237.81183

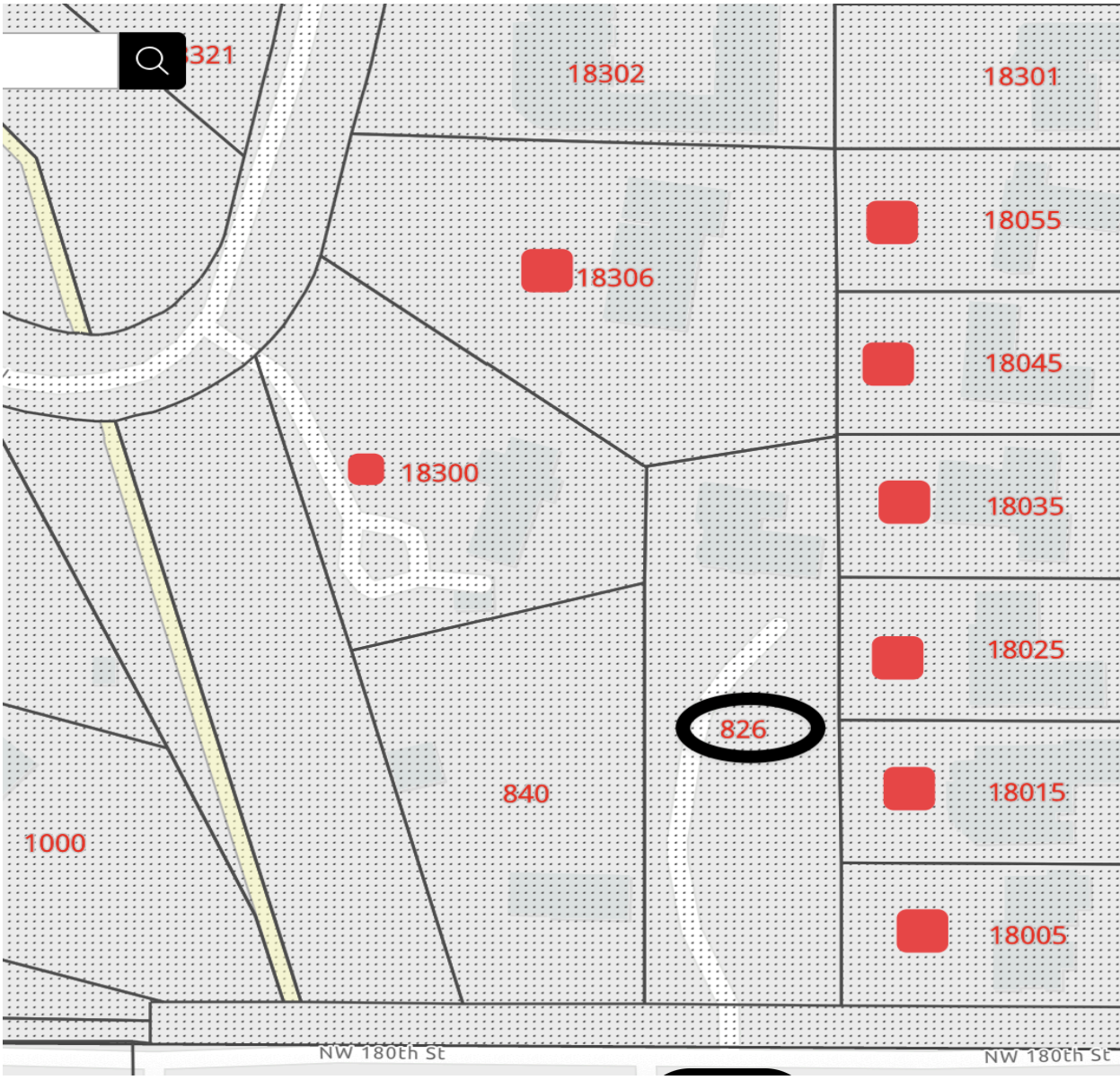


This instance highlights the same bias to the east in having more required properties given the western direction is mostly ravine. Additionally these prior method examples were pulled from an actual approval and the absence of 18535,18532 and 1408 at the least which are clearly within the old 250 feet requirement also highlight how the prior requirement was not accurately applied by applicants or held by the board.

- 826 NW 180th ST presents a test case for an abnormally shaped, in this case long north and south, lot.

Applicant Address	Approval Address	Distance in ft	Distance Rank	Absolute Bearing
826 NW 180TH ST	18300 RIDGEFIELD RD NW	146.333328	1	110.571297
826 NW 180TH ST	18035 8TH AVE NW	161.216143	2	257.37092

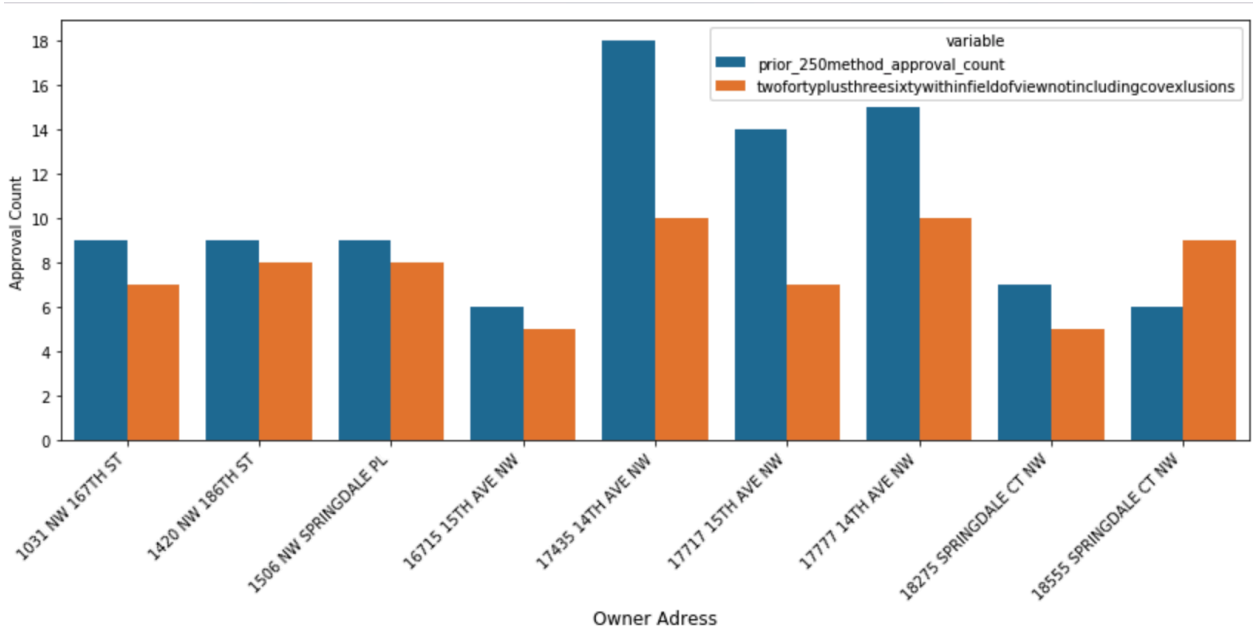
826 NW 180TH ST	18025 8TH AVE NW	184.77013	3	301.335535
826 NW 180TH ST	18045 8TH AVE NW	202.882369	4	230.377281
826 NW 180TH ST	18306 RIDGEFIELD RD NW	207.811461	5	169.472571
826 NW 180TH ST	18015 8TH AVE NW	250.579506	6	318.963157
826 NW 180TH ST	18055 8TH AVE NW	300.501132	7	217.017086
826 NW 180TH ST	18005 8TH AVE NW	334.978843	8	327.240409



The proposed method notably does not capture 840 NW 180th St given the substantial distance between the two structures. This property arguably would be relevant given that it is adjacent to the example. However, this adjacent property would not be view impacted given its location to the southwest. The new

methodology does capture the properties to the east that might be view impacted along 8th while not capturing unnecessary properties down below the bear trail unlike the old methodology. Ultimately, the neighbor signoffs will not be dispositive to the board's decision and some tradeoff in these fringe cases is a worthwhile tradeoff for a less onerous and more impactful list of properties on the whole. The topography, setbacks and size of Innis Arden lots dictates that it is unlikely that the site of a proposed structure will change significantly and therefore the distance determining the relevant approval properties will still remain relevant.

- **2.2. Methodology chart comparison**



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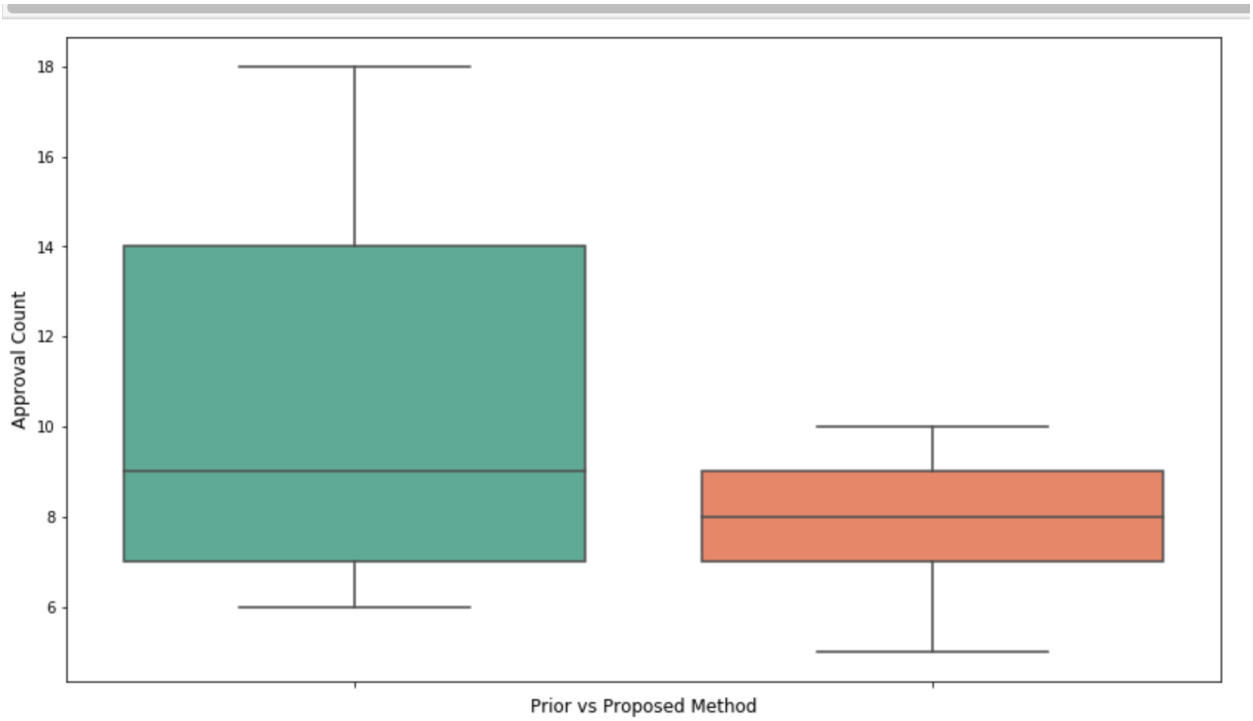

variable	Prior Method	Proposed Method
count	9.00	9.00
mean	10.33	7.67
std	4.30	1.87
min	6.00	5.00
25%	7.00	7.00
50%	9.00	8.00
75%	14.00	9.00
max	18.00	10.00

The minimum number of approved properties is one less at five and the mean is 75% of the test set. The maximum number of approval properties is a more reasonable ten versus eighteen for the test set.

For the entire data set the distribution is as follows for the proposed method.

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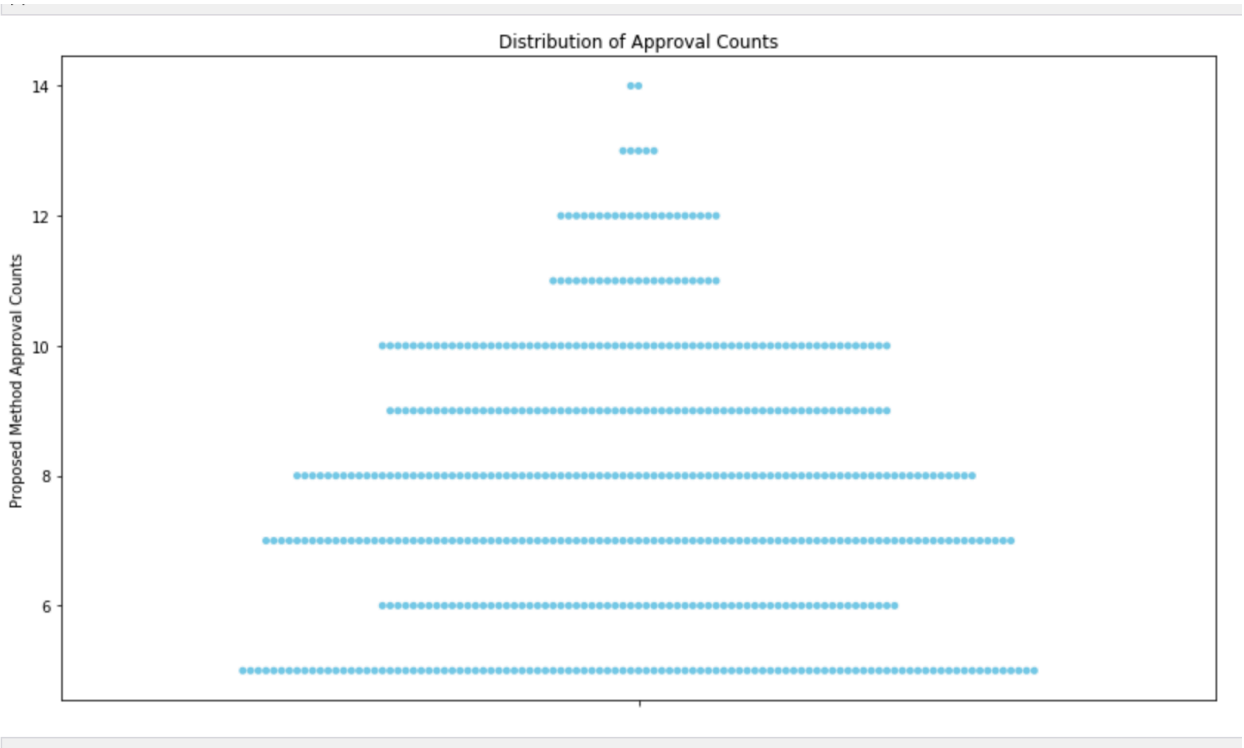
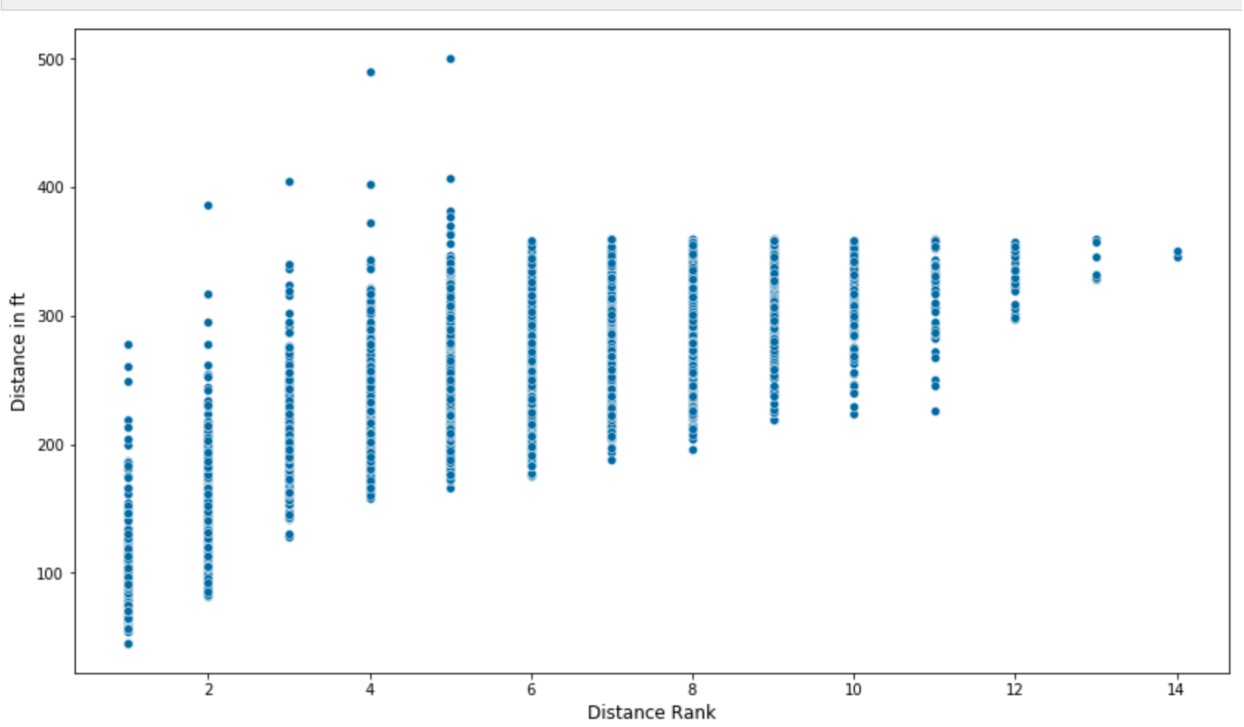


variable	Proposed Method
count	536.00
mean	7.71
std	2.08
min	5.00
25%	6.00
50%	8.00
75%	9.00
max	14.00

The whole data set for the proposed methodology has a mean approval count of 7.71 versus the test set prior method of 10.33 and is normally distributed before adding the five property minimum on the low end. The properties needing the minimum of five approvals criteria now have a similar number of approvals to the old methodology or potentially greater, e.g. 617 NW 175th St.

Distance Rank of Approval Property Vs. Distance in ft.



3.3. Rollout Plan : The goal for introducing the new method would be to solicit and incorporate feedback from the board and neighborhood then vote at the April board meeting on adoption.

- **Feedback and Presentation:**
  - Present a short slide deck or verbally describe the proposed change.
  - In the interest of time I plan on taking no questions and do not plan to describe the mechanics of the change at the board meeting in March when it is first introduced. I will give out a link to a similar external version of this document or post to the B&R website and direct any questions or suggestions to pat@innisarden.org. I will put the instructions for feedback at the bottom of this document to ensure anyone interested has read through the whole thing.
  - At the following meeting from the first introduction after briefly summarizing the change again along with any feedback incorporated and answering common questions, I will make a motion to adopt the new rule.

Send Feedback and Questions to pat@innisarden.org with the subject line B&R Sign Off Feedback.

Appendix.

1. Fully Excluded Properties From the Innis Arden Tree Covenants.

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Address	Subdivision	Block
837 NW INNIS ARDEN DR	1	1
18514 Ridgefield Rd NW	1	1
18504 Ridgefield Rd NW	1	1
871 NW 175th St	3	29
861 NW 175th St	3	29
851 NW 175th St	3	29
807 NW 175th St	3	29
821 NW 175th St	3	29
811 NW 175th St	3	29
801 NW 175th St	3	29
641 NW 175th St	3	29
17267 10th Ave NW	3	29
17243 10th Ave NW	3	29
17237 10th Ave NW	3	29
17233 10th Ave NW	3	29
17221 10th Ave NW	3	29
17211 10th Ave NW	3	29
17201 10th Ave NW	3	29
17097 10th Ave NW	3	29
17087 10th Ave NW	3	29
17071 10th Ave NW	3	29
17065 10th Ave NW	3	29
17061 10th Ave NW	3	29

17051 10th Ave NW	3	29
17043 10th Ave NW	3	29
17035 10th Ave NW	3	29
17021 10th Ave NW	3	29
17011 10th Ave NW	3	29
17001 10th Ave NW	3	29
16741 10th Ave NW	3	29
1000 NW 167th St	3	29
1016 NW 167th St	3	29
1028 NW 167th St	3	29
1038 NW 167th St	3	29
944 NW INNIS ARDEN WAY	3	30
17000 10th Ave NW	3	30
17020 10th Ave NW	3	30
17040 10th Ave NW	3	30
17052 10th Ave NW	3	30
17060 10th Ave NW	3	30
17066 10th Ave NW	3	30
17070 10th Ave NW	3	30
17076 10th Ave NW	3	30
17086 10th Ave NW	3	30
17096 10th Ave NW	3	30
17200 10th Ave NW	3	30

17228 10th Ave NW	3	30
17238 10th Ave NW	3	30
17250 10th Ave NW	3	30
617 NW 175th St	3	30
1031 NW 167th St	3	31
1021 NW 167th St	3	31
1011 NW 167th St	3	31
1001 NW 167th St	3	31
16631 10TH AVE NW	3	31
955 NW Innis Arden Way	3	31
1053 NW 166th St	3	32
1035 NW 166th St	3	32
1023 NW 166th St	3	32
1005 NW 166th St	3	32

2. Applicant Neighbor Signoff Property Prior vs Proposed Method Table

Applicant Address	Prior 250ft Method	240ft or Less	360ft or Less	360ft within field of view	240ft Union 360ft of View for Non Excluded
1031 NW 167TH ST	9	7	14	4	7
1420 NW 186TH ST	9	6	15	2	8
1506 NW SPRINGDALE PL	9	5	14	3	8
16715 15TH AVE NW	6	4	11	1	5
17435 14TH AVE NW	18	6	18	5	10
17717 15TH AVE NW	14	3	10	3	7

17777 14TH AVE NW	15	6	17	5	10
18275 SPRINGDALE CT NW	7	2	8	2	5
18555 SPRINGDALE CT NW	6	7	12	4	9
	93	46	119	29	69
Percentage of Prior Method		49.46%	127.96%	31.18%	74.19%

3. Absolute Bearing Calculation

```
def calculate_bearing(row):
    """
    Calculates the initial bearing from point A to point B.
    Units are in degrees.
    """
    # Convert degrees to radians
    start_lat = math.radians(row['LAT_y'])
    start_lon = math.radians(row['LON_y'])
    end_lat = math.radians(row['LAT_x'])
    end_lon = math.radians(row['LON_x'])

    delta_lon = end_lon - start_lon

    y = math.sin(delta_lon) * math.cos(end_lat)
    x = (math.cos(start_lat) * math.sin(end_lat) -
         math.sin(start_lat) * math.cos(end_lat) * math.cos(delta_lon))

    # Calculate the angle in radians and convert back to degrees
    initial_bearing = math.atan2(y, x)
    initial_bearing = math.degrees(initial_bearing)

    # Normalize to 0-360 degrees
    compass_bearing = (initial_bearing + 360) % 360

    return compass_bearing
```