Appendix A

Transportation Memorandum for the Revised Project

June 13, 2016

Ms. Kirsten Chapman
ICF International
620 Folsom Street
San Francisco, CA. 94107

Re: Traffic Analysis and Site Plan Review for CEQA Addendum for the 300 Airport Blvd. Project in Burlingame, California

Dear Ms. Chapman:

Hexagon Transportation Consultants, Inc. has reviewed the site plan dated February 16, 2016 (with some revisions made in June 2016), for the proposed office development at 300 Airport Boulevard in Burlingame, California. Hexagon completed a Transportation Impact Analysis (TIA) in 2011 for the project, also known as Burlingame Point. The results of that TIA were incorporated into an Environmental Impact Report (EIR), and the project was approved by the City of Burlingame. The purpose of this letter is to confirm that the earlier TIA and EIR are still applicable to the project, as it was proposed in June 2016.

Both the previously approved project and the proposed revision include four office buildings with one level of below-grade parking, a parking garage, surface parking, and an amenity building. Amenities to be provided on-site include a child care center, a fitness center, food services, and retail space.

Traffic Analysis

The project evaluated in the 2011 TIA and EIR consisted of 767,000 square feet (s.f.) of developed space, and the revised project description (as of a summary dated June 7, 2016) includes the same amount of total developed space (766,757 s.f.). The revised project includes the following:

- 703,370 s.f. of office space (including 200 s.f. of elevators that would serve the entire project);
- 8,538 s.f. of conference space that would exclusively serve tenants of the office space, according to the applicant;
- 6,633 s.f. of retail space;
- 35,566 s.f. of food service space;
- 5,250 s.f. of daycare space;
- 7,400 s.f. of fitness center space.

The trip generation estimates in the 2011 TIA were based on 690,000 s.f. of office space and 78,000 s.f. of amenity space (see Table 1, which is the table included in Hexagon's 2011 TIA).

Trip generation rates for the offices and other uses were estimated in 2011 using the Institute of Transportation Engineers' *Trip Generation Manual, 8th Edition (2008),* rates. In order to update the trip generation estimates for the project, we have applied the rates from the 9th Edition of the

Trip Generation Manual, which was published in 2012, and we have revised the square footage of each component of the project (see Table 2). Note that there are slight changes in many of the trip generation rates, compared to the older rates from the 8th Edition of the *Trip Generation Manual*. For the AM and PM peak hours, we have used the trip generation rates for the peak hour of adjacent street traffic for each land use, which is standard practice in the traffic engineering community.

The previously proposed project included conference space in each of the office buildings, but it was included in the total office square footage, rather than broken out as a separate use, for trip generation purposes. The revised project consolidates the conference space in one of the office buildings. Because it would be used only to support the office space and would not be available to non-tenants, it is again included in the office space total for trip generation purposes, since it would not generate additional trips beyond the trips being generated by the office space.

For the amenities that were included in the project in 2011, we used the ITE rates for day care centers, health clubs, retail space, and high-turnover sit-down restaurants. A very conservative reduction of 50% was applied to those rates in 2011 for the internalization of trips, since the proposed amenities would primarily serve the workers in the office portion of the project. We have retained the 50% internalization rate in order to be methodologically consistent, and because it is unlikely that more than 50% of the patrons of the amenities would come from outside the project, given the project's location and the typical usage pattern of amenities included within office developments. For example, food services and retail space within office developments that are located in a central business district in close proximity to many other office buildings can reasonably expect to attract many patrons from outside the building where the restaurant or shop is located. Even in those settings, however, most of the patrons that do not work in that office building would likely walk rather than drive to the restaurant or shop, and would not generate additional vehicle trips. Food services that are open to the public in large business parks (e.g., Moffett Park in Sunnyvale or Stanford Research Park in Palo Alto) may also attract a significant percentage of patrons from offices other than the one where the restaurant is located. The proposed project, however, would not be close to a large number of other office buildings. Due to its somewhat isolated location, there is no basis for assuming that more than 50% of the patrons of its amenities would come from outside the project.

The trip generation estimates in the TIA and EIR also included a reduction of 13% from the ITE peak hour trip rates and 8% from the ITE daily trips rates, based on preparation of a Transportation Demand Management (TDM) Plan by the applicant. The applicant has committed to implementing a TDM Plan for the revised project. Based on Hexagon's experience in preparing TDM Plans for many other office developments in the Bay Area and based on recent research on TDM measures summarized in the report "*Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures"* (California Air Pollution Control Officers Association, August 2010), recent best practices in the TDM field indicate that the revised project would be able to reduce peak hour vehicle trips by at least 13% and daily trips by at least 8%.

Table 1
2011 Project Trip Generation Estimates (from the TIA dated 10/18/2011)

				AM Peak Hour				PM Peak Hour			
Land Use	Size	Daily Rate	Daily Trips	Peak-Hour Rate	In	Out	Total Trips	Peak-Hour Rate	In	Out	Total Trips
Proposed Use											
Office[1]	690 ksf	8.56	5,902	1.27	774	106	879	1.23	145	707	851
Day Care[2]	8 ksf	79.26	634	12.25	52	46	98	12.50	47	53	100
Internal Reduction		*50%*	*(317)*	*50%*	*(26)*	*(23)*	*(49)*	*50%*	*(24)*	*(27)*	*(50)*
Health Club[3]	25 ksf	32.93	836	1.39	16	19	35	3.52	51	38	89
Internal Reduction		*50%*	*(418)*	*50%*	*(8)*	*(10)*	*(18)*	*50%*	*(25)*	*(19)*	*(45)*
Retail[4]	20 ksf	42.94	877	1.00	12	8	20	3.73	37	39	76
Internal Reduction		*50%*	*(439)*	*50%*	*(6)*	*(4)*	*(10)*	*50%*	*(19)*	*(19)*	*(38)*
Restaurant[5]	25 ksf	127.15	3,179	11.67	152	140	292	11.17	165	114	279
Internal Reduction		*50%*	*(1,589)*	*50%*	*(76)*	*(70)*	*(146)*	*50%*	*(82)*	*(57)*	*(140)*
TDM Reduction		*-8% of office*	*(450)*	*13% of office*	*(101)*	*(14)*	*(114)*	*13% of office*	*(19)*	*(92)*	*(111)*
Total			**8,215**		**789**	**199**	**988**		**276**	**737**	**1,013**

Notes:
1. Institute of Transportation Engineers, *Trip Generation* , 8th Edition (2008). General Office Building (710). Fitted Curve Equation used.
2. Institute of Transportation Engineers, *Trip Generation* , 8th Edition (2008). Day Care Center (565).
3. Institute of Transportation Engineers, *Trip Generation* , 8th Edition (2008). Health/Fitness Club (492).
4. Institute of Transportation Engineers, *Trip Generation* , 8th Edition (2008). Shopping Center (820).
5. Institute of Transportation Engineers, *Trip Generation* , 8th Edition (2008). High-Turnover (Sit-Down) Restaurant (932).

Table 2
Updated Project Trip Generation Estimates (June 2016 Project Description)

				AM Peak Hour				PM Peak Hour			
Land Use	Size	Daily Rate	Daily Trips	Peak-Hour Rate	In	Out	Total Trips	Peak-Hour Rate	In	Out	Total Trips
Proposed Use											
Office[1]	711.908 ksf	8.20	5,835	1.29	810	110	920	1.23	149	727	876
Day Care[2]	5.25 ksf	74.06	389	12.18	34	30	64	12.34	30	34	65
Internal Reduction		*50%*	*(194)*	*50%*	*(17)*	*(15)*	*(32)*	*50%*	*(15)*	*(17)*	*(32)*
Health Club[3]	7.400 ksf	32.93	244	1.41	5	5	10	3.53	15	11	26
Internal Reduction		*50%*	*(122)*	*50%*	*(3)*	*(3)*	*(5)*	*50%*	*(7)*	*(6)*	*(13)*
Retail[4]	6.633 ksf	42.70	283	0.96	4	2	6	3.71	12	13	25
Internal Reduction		*50%*	*(142)*	*50%*	*(2)*	*(1)*	*(3)*	*50%*	*(6)*	*(6)*	*(12)*
Restaurant[5]	35.566 ksf	127.15	4,522	10.81	211	173	384	9.85	210	140	350
Internal Reduction		*50%*	*(2,261)*	*50%*	*(106)*	*(87)*	*(192)*	*50%*	*(105)*	*(70)*	*(175)*
Total Square Footage	766.757										
TDM Reduction		*8% of office*	*(467)*	*13% of office*	*(105)*	*(14)*	*(120)*	*13% of office*	*(19)*	*(94)*	*(114)*
Total			**8,087**		**832**	**201**	**1,033**		**263**	**732**	**995**

Notes:

Source for all trips rates is Institute of Transportation Engineers, Trip Generation Manual, 9th Edition (2012).
1. General Office Building (ITE land use 710). Fitted curve equation used. Proposed conference center (8,538 s.f.) and two elevators that would serve the entire project (200 s.f.) are included in the office square footage.
2. Day Care Center (ITE land use 565). Average rates used.
3. Health/Fitness Club (ITE land use 492). Average rates used.
4. Shopping Center (ITE land use 820). Average rates used.
5. High-Turnover (Sit-Down) Restaurant (ITE land use 932). Average rates used.

Table 3
Comparison of 2011 and 2016 Trip Generation

Project	Daily Trips	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total Trips	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total Trips
Previously Proposed Project	8,215	789	199	988	276	737	1,013
Revised Project	8,087	832	201	1,033	263	732	995
Difference	**-128**	**43**	**2**	**45**	**-13**	**-5**	**-18**

As can be seen from Table 3, which compares the trip generation estimates from the 2011 project and 2016 revised project, the revised project would generate 128 fewer daily trips and 18 fewer PM peak hour trips than the project that was analyzed in 2011. The revised project would generate 45 more trips during the AM peak hour than the project that was analyzed in 2011. If, however, the project's amenities have less than 50% of their morning patrons come from outside the project (i.e., patrons who drive to or from one of the amenity uses during the AM peak hour but do not work in one of the four office buildings) or if the project's TDM measures achieve a greater than 13% reduction in AM peak hour trips, then there would be fewer than 45 additional trips in the AM peak hour.

The trip distribution and assignment in the 2011 TIA and EIR were projected by the travel demand forecasting model used by the City/County Association of Governments of San Mateo County (C/CAG). Not all trips generated by the project would travel in the same direction going to and from the project site. Some would travel to and from the north (towards the Anza Boulevard and Broadway interchanges on US 101) and some would travel to and from the south (towards the Peninsula Avenue and Poplar Avenue interchanges). Thus, not all 45 additional trips in the AM peak hour would go through the same intersections or make the same turning movements. Because of this, no single intersection would experience 45 additional AM peak hour trips. Even the study intersections closest to the project would likely experience only half that many trips. In Hexagon's experience, the addition of 20-25 trips to an intersection would not cause a significant impact, based on the City of Burlingame's definition of significant impacts at intersections. Hexagon is not aware of any evidence that traffic conditions in the area have changed since the 2011 EIR, other than the current construction work on the Broadway interchange. This construction was assumed in the 2011 EIR and is expected to improve the operation of some of the study intersections when the construction is complete.

Therefore, the revised project description is substantially consistent with the trip generation estimates and the traffic impact findings of the 2011 TIA and EIR, and there is no need to update that portion of the analysis.

Site Plan Review

We have also reviewed the project's access and circulation, as presented on the site plans received by Hexagon in June 2016 (see Figure 1), in comparison to the December 3, 2010 site plans reviewed for the 2011 TIA and EIR. Access to the site is provided by Airport Boulevard, which would be realigned so as to run through the middle of the site in a curvilinear fashion, with two office buildings on each side of the roadway. The revised site plan indicates Airport Boulevard would be constructed 15 feet further east than originally planned, but that revision would not affect the site's access or circulation in any way. The roadway would be 62 feet wide, which is the same width that was proposed in 2011 and would be adequate for two travel lanes in each direction and a left-turn pocket.

According to the 2011 TIA, the southernmost intersection within the site on Airport Boulevard would be signalized, and the northernmost intersection would be signalized at the time of development of the 350 Airport Boulevard site, just north of this parcel. Based on the updated site plan, the south intersection would provide access to surface parking lots near Buildings 2, 4 and the Amenities Building, access to the parking garage, access to entrances to the podium-level parking on both sides of Airport Boulevard and access to the truck loading zones for Buildings 2 and 4. The north intersection would provide access to a surface lot near Building 1, access to entrances to the podium-level parking on both sides of Airport Boulevard, and access to truck loading zones for Buildings 1 and 3. Assuming that the build-out plans for the 350 Airport Boulevard site remain the same as they were in 2011, we believe that signalization of this north intersection would still be appropriate.

On both the 2010 and 2016 versions of the site plan, the parking garage would be located in the southwest quadrant of the site. The 2016 site plan provides for more direct access to the parking garage (and one of the entrances to the podium-level parking) from Airport Boulevard, which is preferable to the earlier design which required drivers to drive through a surface lot to reach it.

Parking is also provided on a below-grade podium level on both sides of Airport Boulevard (the east and west portions of the site). Similar to the 2010 site plan, the 2016 site plan shows two entrance-exit points for each below-grade parking area, but these access points have been moved (see Figure 2). Whereas the 2010 site plan placed one of the podium-level parking entrances within the same area where there would be the most pedestrian activity, the updated site plan has moved that entrance to the back of Building 3, where there would be fewer traffic conflicts and much less pedestrian activity. Hexagon concurs with this change.

A key feature of the 2016 site plan is to provide more separation between vehicles and pedestrians and create a more pedestrian-friendly environment. The 2016 site plan includes a pedestrian promenade that crosses Airport Boulevard and runs between the buildings on both sides of the roadway. This area would include a plaza and dining area on each side of Airport Boulevard and would lead to a bay overlook and the San Francisco Bay Trail, a Class I pedestrian and bicycle facility. The June 2016 site plan indicates that the Pedestrian Promenade crosswalks across Airport Boulevard would include a raised speed table and a changed pavement pattern in order to enhance safety for pedestrians crossing Airport Boulevard. This version of the site plan also includes a pedestrian safety island in the median, creating a safe harbor for pedestrians (see Figure 3). Hexagon concurs with this revision.

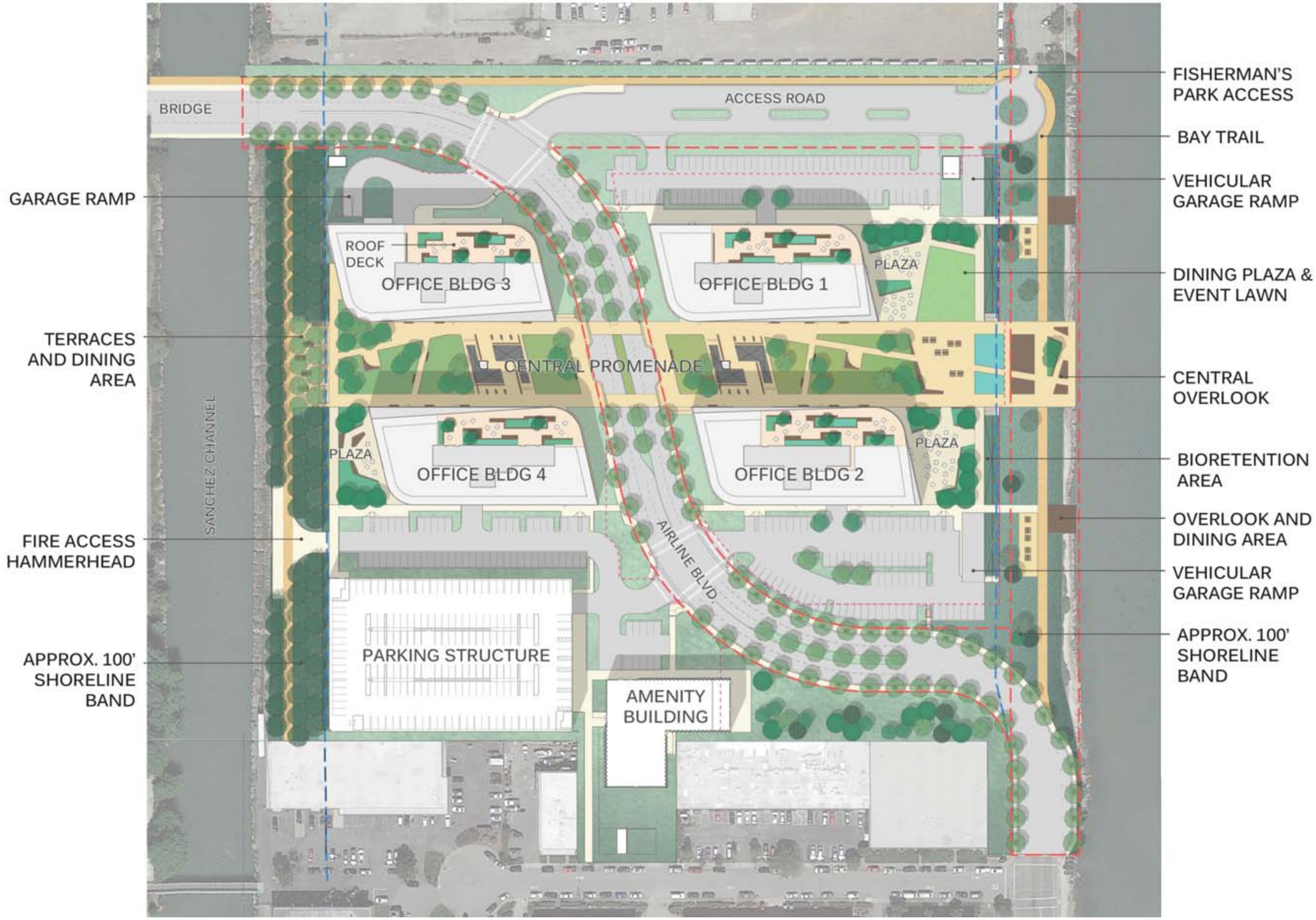


Figure 1
Site Plan

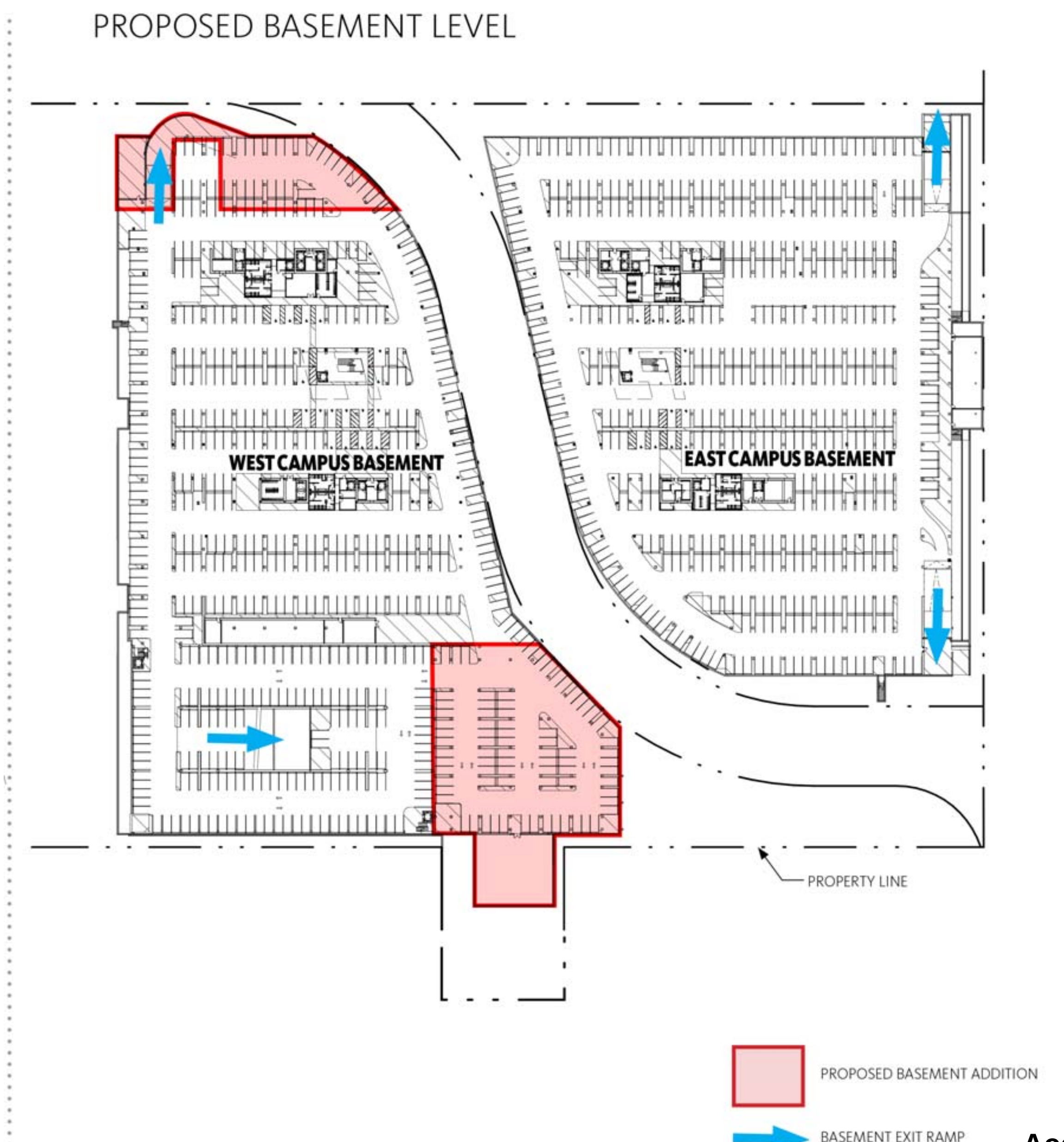


Figure 2
Access Points for Below-Grade Parking

1. PEDESTRIAN CROSSING
2. VEHICLE DROP-OFF
3. SHUTTLE DROP-OFF
4. PEDESTRIAN SAFETY ISLAND
5. TRAFFIC CALMING
6. PUBLIC ART

Figure 3
Pedestrian Promenade Crosswalk

The 2016 site plan indicates that the areas designated for shuttle stops would be shifted away from the pedestrian promenade, instead of located in the center of the intersection of the promenade and Airport Boulevard (see Figure 3). The areas designated for pick-up and drop-off by private vehicles on both sides of Airport Boulevard are near the promenade crosswalks, but there is improved separation of the pedestrian activity and the drop-off/pick-up zones. We agree with these changes to the locations of the pull-outs for shuttles and for carpools.

We appreciate the opportunity to submit this report. Please do not hesitate to contact us if additional information is needed.

Sincerely,

HEXAGON TRANSPORTATION CONSULTANTS, INC.

Gary K. Black
President

Appendix B
Wind Studies for the Revised Project

Appendix B-1

Wind Impact Analysis

Revised Project

BMT Fluid Mechanics Ltd
67 Stanton Avenue
Teddington, TW11 0JY, UK
Tel: +44 (0)20 8614 4400
Fax: +44 (0)20 8943 3224
enquiries@bmtfm.com
www.bmtfm.com

TECHNICAL MEMORANDUM

From: Max Lee

Date: July 18th, 2016

Subject: **Burlingame Point Development – Wind Impact Analysis**

INTRODUCTION

Background and Study Purpose

This memorandum serves to elucidate the salient results of a wind tunnel study that principally compared the downwind effects of the proposed 300 Airport Boulevard Development configurations on the wind conditions observed within the adjacent sailing and windsurfing area. The objective of the test was to conduct a relative comparison of select parameters (wind speed and turbulence intensity) between the "Gensler Scheme" and "Entitled Scheme" in an effort to determine if the collective differences in massing and architectural geometry between the two schemes would culminate in adverse effects on wind conditions downstream.

The site of the proposed development is located in Burlingame, California. It is bounded by Beach Road to the south and Airport Boulevard to the north and east, which immediately transitions to the waters of San Francisco Bay, where the primary area of interest for this study is situated.

An EIR was prepared in November 2011 for a previously proposed project on the site, namely the "Entitled Scheme" in this technical memorandum. During the processing of the EIR on the earlier project, public concern was raised that the proposed development would interfere with the predominantly westerly winds that pass over the site and then over the Bay. These winds are relied upon by recreational users to propel sail boards launched and landed at the Coyote Point shoreline and which sail the Bay to the east and north of the project site.

In response to questions about the magnitude and extent of the wind-shadow effect of the earlier proposal, a series of wind-tunnel tests were performed, in order to define the existing wind environment in the Bay to the east of the site and along the shore, as well as to determine the wind environment that would exist were that proposed project built. A primary area 1,500 ft. on a side, with an area of approximately 47.9 acres, was studied. As part of those studies, thresholds of significance with respect to wind reductions for windsurfing were developed.

The purpose of this study is to determine the impact of the current proposed project, namely the "Gensler scheme" in this technical memorandum, with respect to wind conditions, utilizing the thresholds of significant and basic protocol established by the City of the Burlingame in the earlier EIR.

Considering the spatial relationship of the project site to the Bay and the Coyote Point beach areas, the tests were conducted for three wind directions: west (270°), west-northwest (292.5°) and northwest (315°). From the aforementioned directions, the area of study lies generally downwind of the development site, whereby any effects imparted to the resulting wind flow would be most prominently observed. This technical memorandum describes the combined effects for those three wind directions.

Project Description and Location

The 300 Airport Boulevard Project is within the Anza Point Subarea of the Burlingame Bayfront Specific Plan (Specific Plan) and would construct 767,000 square feet of new office or life science uses on a currently vacant 18.12-acre site. The 300 Airport Boulevard site is currently accessible from Beach Road and is bounded by Airport Boulevard to the north, Airport Boulevard and the Bay to the east, light-industrial buildings along Beach Road to the south, and Sanchez Channel to the west.

The 300 Airport Boulevard Site is currently vacant and consists of impervious surfaces and vegetation. Previously, the site was developed as the Burlingame Drive-In Theater, with four screens and a projection/concession building, located on reclaimed land supported by perimeter dikes of concrete rubble and soil. The cinema complex operated from 1965 to 2001 and was demolished in 2002. The site was then re-graded for future construction activities.

The Gensler and Entitled schemes comprise of developments with similar heights and overall massing, however some differences are noted in the planform geometry and positions of the constituent buildings for the respective schemes. The site location and plan views of the proposed development configurations are illustrated in Figures 1 to 3.

The surrounding areas are currently used by various commercial businesses and office spaces. There are several commercial buildings located on the southern boundary of the site and across Beach Road. In addition, commercial properties are located across the Sanchez Channel to the west.

To the south and further to the east of the site are a shoreline trail and the Coyote Point County Recreation Area. An important use of this beach and bay front area is the launching/landing and transit of sail boards to nearby wind surfing areas out in the Bay. Lack of wind can make the launchings/landings more difficult, as well as hinder transit of the near shore portion of the Bay in reaching the primary wind surfing areas off shore.

EXISTING SETTING

Large buildings and structures will affect the nearby wind environment and have residual effects that reach downwind from the building site. Buildings that are much taller than the surrounding buildings or vegetation intercept and redirect winds that might otherwise flow overhead, and bring them down the vertical face of the building to ground level, where they create ground-level wind and turbulence. These redirected winds can be relatively strong and also relatively turbulent, and can be incompatible with the intended uses of the ground-level spaces around the building.

Wind speeds will be reduced downwind of buildings. In the project vicinity, existing buildings and vegetation tend to slow the winds near ground level, due to the friction and drag of the structures and vegetation themselves. The site is currently vacant, but there are buildings (approximately 80 ft.) north of the Bayshore Freeway that lie more than 1,000 ft. away from the eastern boundary of the site.

Existing Climate and Wind Conditions

Wind conditions at the site are reasonably well represented by wind data taken at San Francisco Airport (SFO) meteorological station, approximately 3 miles to the north of the project site.

Previous wind studies have been carried out to analyse the wind climate and conditions for the project site and to establish the general occurrence of winds at the site during the time of interest for sail boarding (late spring well into fall, April 1st through November 1st) from 6:00am until 7:00pm (mainly during the daylight hours). The most frequent and strongest winds occur at three wind directions, as follows: west (270°), west-northwest (292.5°) and northwest (315°).

Coyote Point Recreation Area Shoreline and Bay

Wind speed effects on land and water-related uses of the Coyote Point Recreation Area shoreline and Bay areas vary with use. Swimmers may or may not appreciate the wind, and will require some added effort in swimming against the wind. Board sailors require wind, and the more proficient the sailor, the more wind is preferred. Because the best board sailing areas are well over a mile from shore, sail boarders require wind to reach those sailing areas and to return safely. With the existing conditions, the known near-shore “wind-shadow” is viewed as an annoyance, because it hinders launching and landing of boards and slows transit to the primary off-shore sailing area. The primary launch area is the beach nearest the parking areas of the Coyote Point Recreation Area. Boards launched there proceed out to the north, avoid the pilings used to delineate the swimming area, and then move into the Bay. A secondary launch area is the beach near the Airport Boulevard bulkhead.

At this location nearest the Project, wind surfers park on adjacent public streets in the surrounding area and access the water at the nearest beach location. Boards launched from that beach would move to the northeast, to avoid the wind shadow from the bulkhead (or berm) structure and the nearby buildings on Beach and Lang Roads, and then would move northward into the Bay. The primary and secondary launch areas are shown in Figure 4.

There are no specific criteria for minimum wind speeds to support "good" sailing. Rather, it appears to be the case that the more wind, the better. Any action that resulted in substantial new wind-shadow within the primary wind surfing areas, or in launching and landing sites or transit lanes would be a material detriment to the utility of the Coyote Point Recreation Area and Bay as an important wind-surfing area. The City of Burlingame considered these recreational wind surfing needs in creating community wind standards set out in the Bayfront Specific Plan. These community wind standards act as guidelines for developments in the area to avoid surpassing specified wind-speed reductions and result in unacceptable impacts to recreational wind surfing needs.

METHODOLOGY

Model and Wind Testing Protocols

A 1:300 scale model of the project site and surrounding vicinity, as well as a substantial downwind reach into the Bay was constructed in order to simulate the project and its existing context. The model was sized to contain a radius of approximately 2170 ft. from the center of the wind tunnel model. The scaled model of the proposed Project and surroundings was constructed by BMT Fluid Mechanics (BMT) and tested in BMT's Boundary Layer Wind Tunnel in Teddington, United Kingdom.

Wind-tunnel tests were conducted for two configurations: 1) the previous Entitled Scheme; 2) the proposed Gensler Scheme. Each scenario wind-tunnel tested for each of three wind directions: west (270°), west-northwest (292.5°) and northwest (315°).

The test procedure consisted of orienting the selected configuration of the model in the boundary layer wind-tunnel and measuring the wind speed at each of a regular grid of test locations with "Irwin probes". The boundary layer wind tunnel has a test section 15.7 ft. wide, 7.9 ft. high and 49.2 ft. long with a 14.4 ft. diameter multiple plate turntable and a remotely controlled 3-dimensional traversing system. The blockage ratio for the current project will be less than 5%, which will not cause any impact to the wind tunnel studies. The operating wind speed range is 0.45 – 100.7 mph. The turbulent boundary layer is set up using an arrangement of roughness elements distributed over the floor of the wind tunnel, vertical posts and a two-dimensional barrier placed at the entrance to the test section to simulate the wind profile and turbulence intensity at the proposed site.

Wind speed measurements were made using so-called "Irwin probes", capable of measuring fluctuating pressure differences that are calibrated against wind speed. A system of probes running simultaneously was used to obtain results from up to 49 locations at a height corresponding to 5 ft. at full scale. Measurements were taken for the three wind directions in increments of 22.5°.

Data were recorded for 60 seconds for each wind direction to determine the mean and 3-second gust wind speeds. The turbulence intensity was derived based on the mean and 3-second gust wind speeds.

The ratio between the measured wind speeds at a height of 5 ft. above the surface level and the wind speed at the reference height, namely the "wind speed-up ratio", was derived from the Irwin measurements. The inherent uncertainty of measurements made with the Irwin probes is approximately ±5% of the true values.

Measurement Point Grid

The test site consists of 49 measurement locations, 7 by 7 square grid, with 250 ft. spacing between each of the individual measurement points. The test grid is oriented due north-south and due east-west. The area within the 1,500 ft. by 1,500 ft. test grid is 51.65 acres. A diagonal cut at the southeast corner reduces the area of bay surface to approximately 47.9 acres, providing adequate coverage of the windsurfing and sailing areas within the Bay area to the east of the proposed development. The study area and the measurement locations layout are illustrated in Figure 4.

Note that the wind tunnel model did not involve the utilization of any landscaping or wind mitigation elements, as the primary goal was to investigate the effects directly related to the implementation of the proposed development schemes.

Wind Evaluation Criteria

There were no established criteria to define the level of reduction in wind speed that would constitute a "significant adverse impact" under the California Environmental Quality Act (CEQA) for wind surfing at Coyote Point Recreation Area or in the Bay.

The earlier EIR for a previously-proposed development on the project site utilized the standard for significance, which is reflected in the Bayfront Specific Plan community wind standards:

> *"A reduction of 10% or more in wind speeds at irreplaceable launching and landing sites, or a reduction in wind speed of 10% or more over large portions of transit routes or primary board sailing areas would be a significant adverse impact."*

The wind tunnel test results were processed and analysed in conjunction with the application of the abovementioned significance criteria. Notably, for turbulence intensity, there is an absence of an equivalent criterion, however a measured increase is assumed to be an adverse impact.

Test Output

Each wind-tunnel measurement results in a ratio that relates to the measured speed of surface-level wind (at 5 ft. height) to the wind speed at reference height. These ratios, namely “wind speed-up ratios”, are the output data from the wind tunnel tests. The ratios are usually numbers that are less than 1.00, because the wind speeds at the ground level are usually substantially less than the wind speed at the reference height.

The wind speed-up ratios for the three wind directions for each measurement point were averaged. The resulting averaged ratios for the Gensler Scheme were divided by the averaged ratios for the Entitled Scheme for each measurement point. The result is the percent change in wind speed that would result from the change between two configurations.

For the purposes of this study, the results are presented as a relative comparison, with the Entitled Scheme selected as the reference configuration, i.e.:

- If the implementation of the Gensler scheme results in a reduction in the averaged wind speed-up ratios, this is indicated by a negative value in Figure 5

- If the implementation of the Gensler scheme results in an increase in the averaged local turbulence, this is indicated by a positive value in Figure 6 (as a reference)

As such, any indicated increase or decrease in the measured quantities of the performance parameters is not representative of an isolated feature inherent to the individual schemes; instead it correlates to the effects when transitioning from the Entitled Scheme to the Gensler Scheme.

RESULTS

The test results (percentage of changes in the mean wind speeds ratios and turbulence intensities averaged over three wind directions) are presented in Figures 5 and 6. The pertinent observations are summarised as follows:

1. *When averaged across the three wind directions tested, the maximum reduction in mean wind speeds (with the implementation of the Gensler scheme against the Entitled Scheme) observed is 3%, whereas approximately 70% of the test locations display unchanged or increase (up to 6%) in recorded wind speeds ratios*

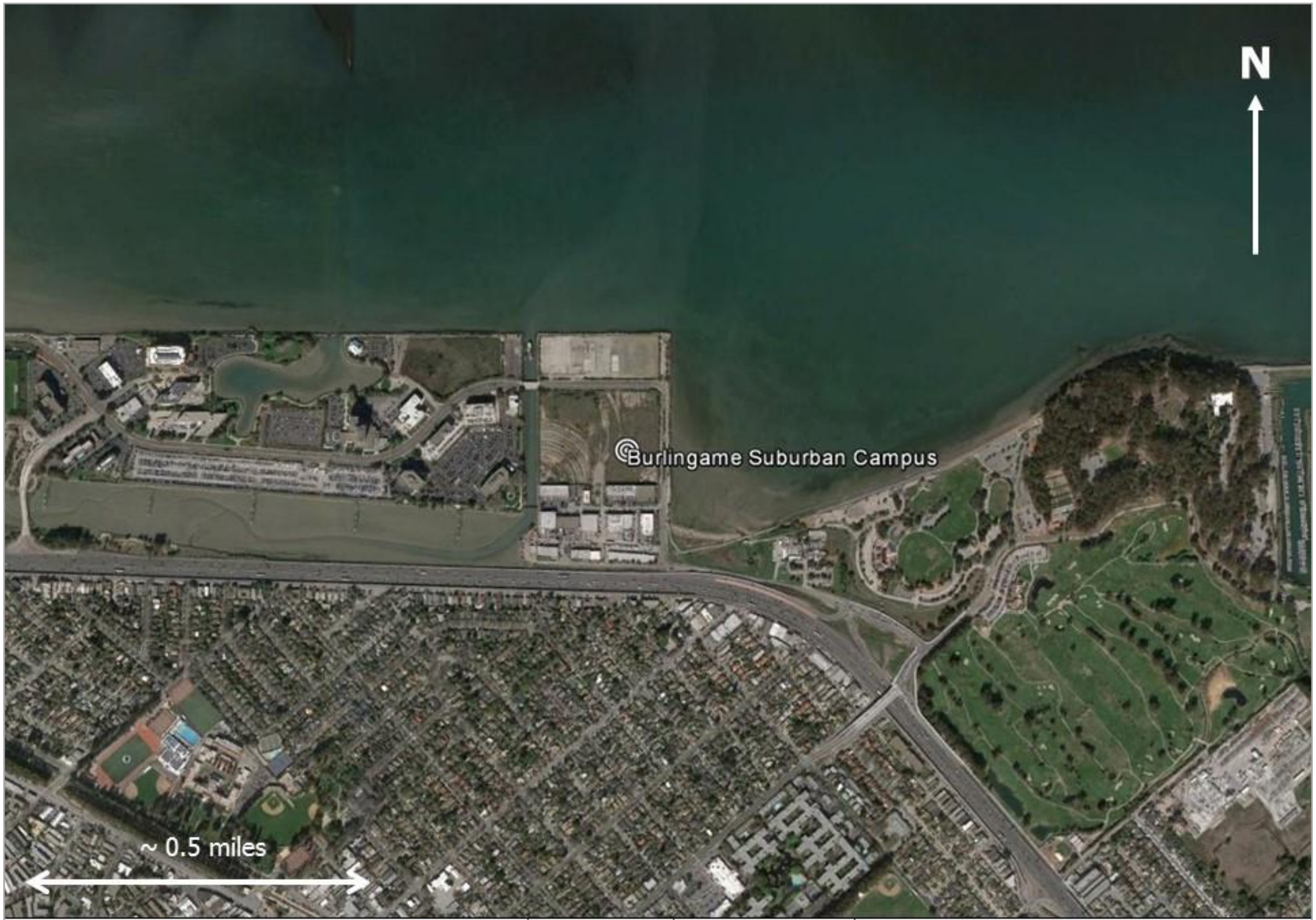
2. *Conversely, approximately 10% of the test locations experience an averaged increase in turbulence intensity (up to an 4% difference), whilst the remaining test locations experience an averaged unchanged or decrease in turbulence intensity compared to the Entitled Scheme.*

The test results show that the difference in wind speeds associated with recreational activities native to the area, such as windsurfing and sailing, between the Gensler Scheme and the Entitled Scheme is less-than-significant.

It is understood wind tunnel tests had been carried out previously to prove that the impacts of the Entitled Scheme on the recreational boardsailing in the vicinity of the project site would be less-than significant as defined by the CEQA significance criterion. Figure 7 shows the average wind speed changes of the Gensler Scheme against the existing vacant site by interpolating the test results for the current and previous wind tunnel studies. It can be seen the wind shadow of the Gensler Scheme, defined by a 10% wind reduction, coincides with the same portions of transit routes as the EIR test results for the Entitled Scheme in November 2011, but does not contain launching / land sites or primary board sailing areas. Therefore, it is reasonably concluded that, the Gensler development scheme would also not result in a reduction of 10% or more in wind speeds at "irreplaceable launching and landing sites", "primary board sailing areas" or "large portions of transit routes". With the Gensler Scheme the project impacts on the recreational boardsailing in the vicinity of the project site would be less-than significant.

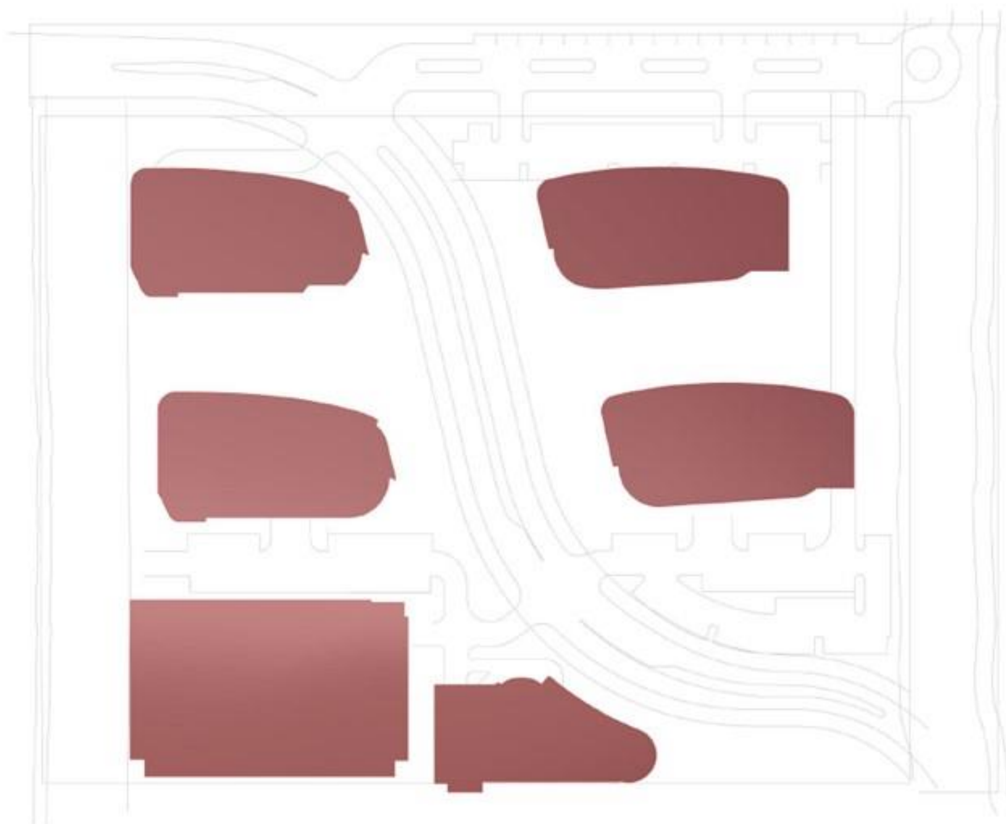
The relative comparison of the Gensler Scheme with the Entitled Scheme, in wind speed-up ratios and local turbulence, for each wind direction (west, west-northwest and northwest), are shown in Figures 8 to 10 and Figures 11 to 13, respectively. A positive value indicates an increase while a negative value indicates a reduction in wind speed or turbulence. For the wind coming from the west, there is no significant difference, compared to the averaged changes in wind speeds, near the primary launch sites, but slightly less wind speeds increment near the secondary launch site. In contract to the wind from the west, the wind speeds from the west-northwest slightly reduce near the primary launch sites but has no noticeable difference, compared to the averaged changes in wind speeds, near the secondary launch site. Higher wind speeds increment is presented at the south to southwest of the wind surfing site for the wind coming from the northwest.

Figure 1: Site Location of the proposed Burlingame Point development



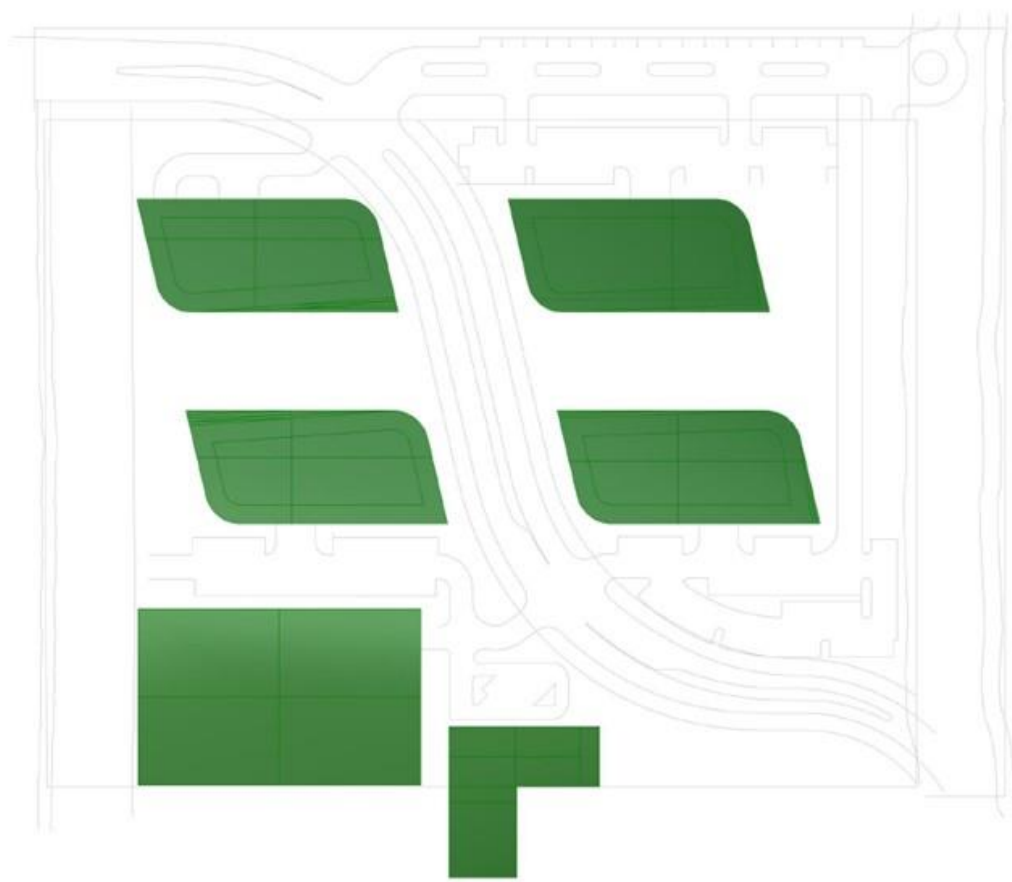
431974 – Burlingame Point Site Location	Status: Preliminary	Drawing No: 431974/ Fig 1	Prep: D. Roeder Date: Jul-18-2016 BMT Fluid Mechanics

Figure 2: Plan view of the proposed development – Entitled Scheme



431974 – Burlingame Point Plan view of the development – Entitled Scheme	Status: Preliminary	Drawing No: 431974/ Fig 2	Prep: D. Roeder Date: Jul-18-2016	BMT Fluid Mechanics

Figure 3: Plan view of the proposed development – Gensler Scheme



431974 – Burlingame Point Plan view of the development – Gensler Scheme	Status: Preliminary	Drawing No: 431974/ Fig 3	Prep: D. Roeder Date: Jul-18-2016	BMT Fluid Mechanics

Figure 4: Wind direction definition and test point locations

Figure 5: Averaged changes in mean wind speeds – Gensler Scheme vs. Entitled Scheme

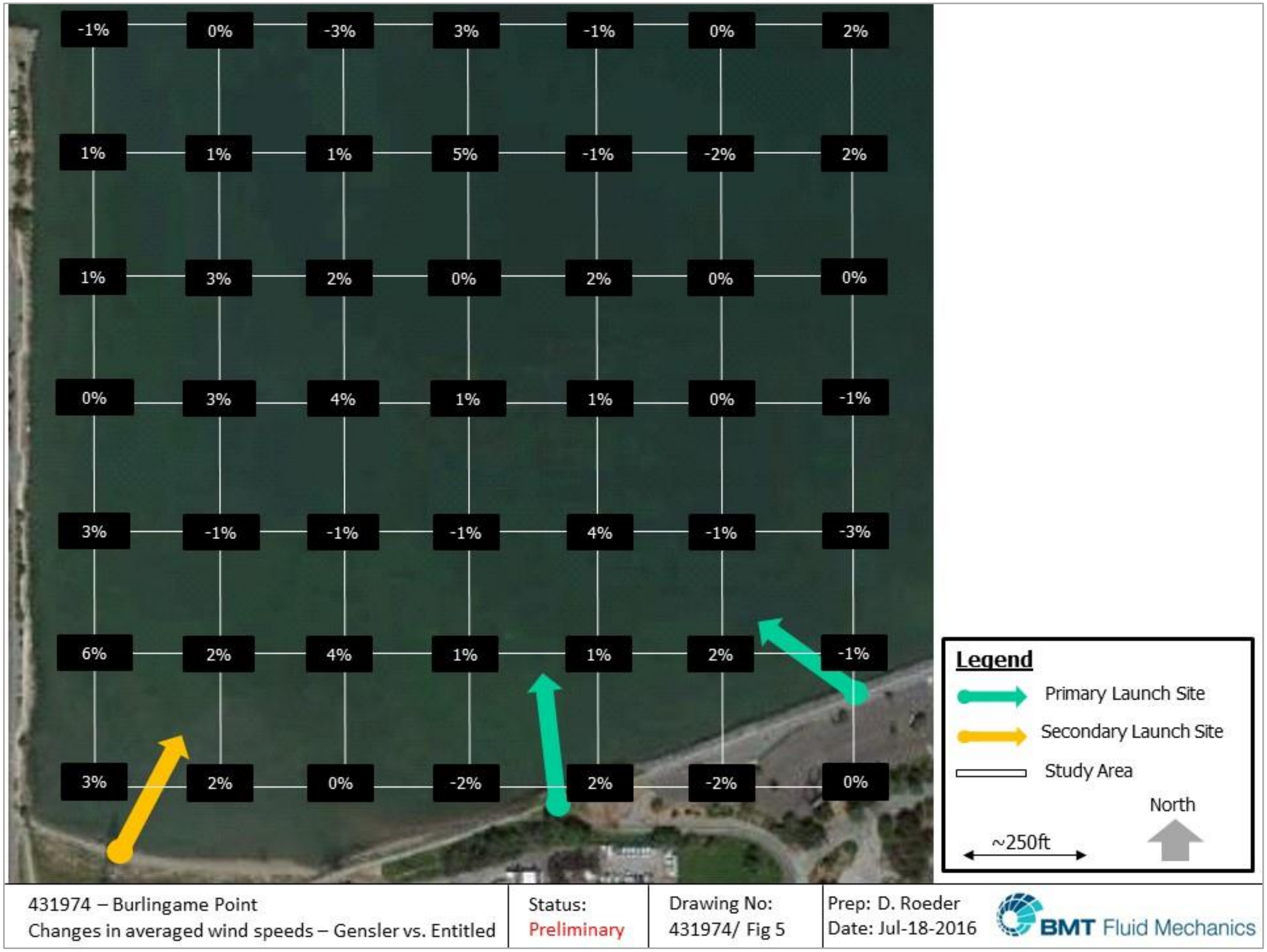


Figure 6: Averaged changes in turbulence intensities – Gensler Scheme vs. Entitled Scheme

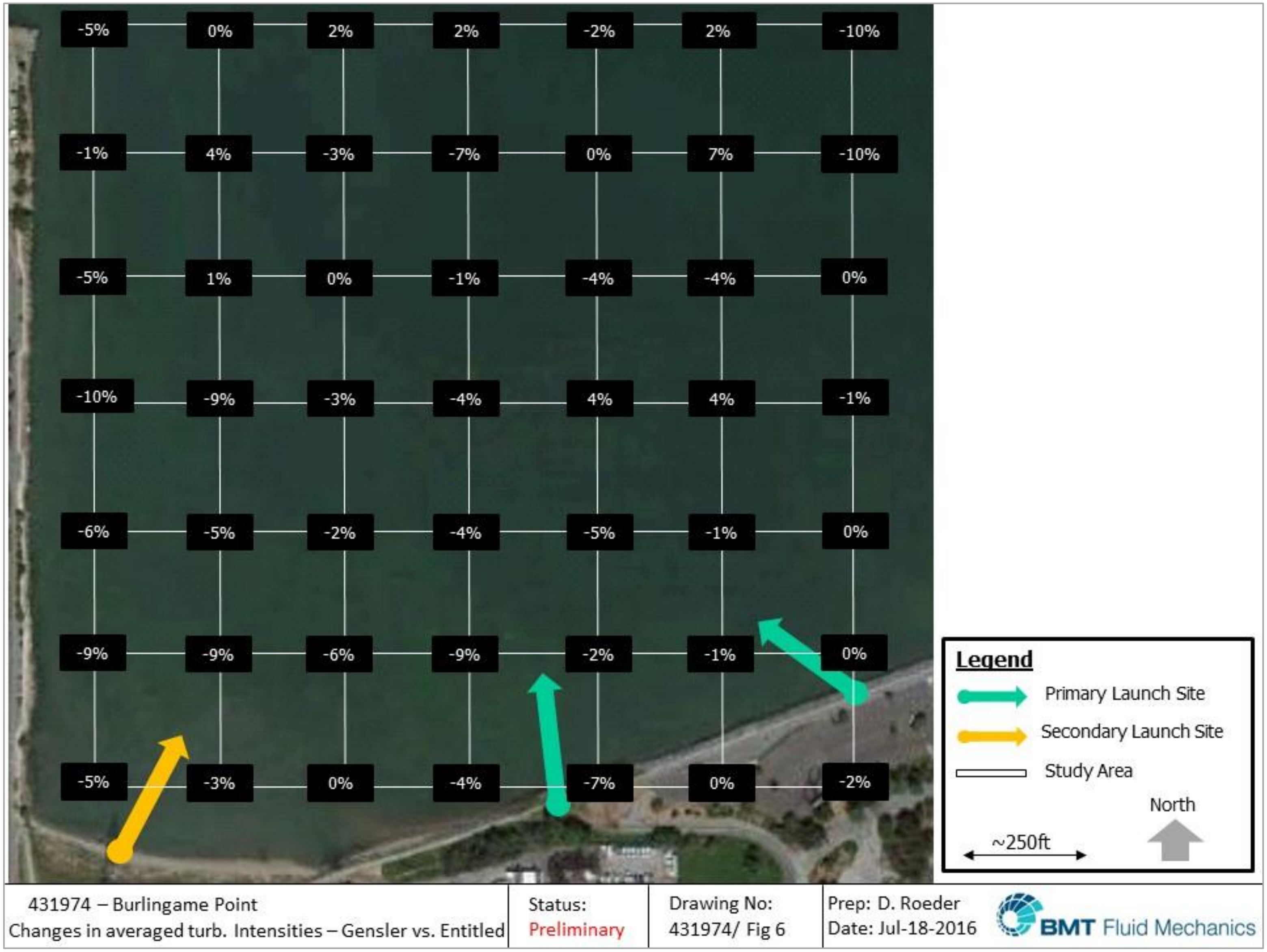


Figure 7: Averaged changes in mean wind speeds – Gensler Scheme vs. Existing Vacant Site

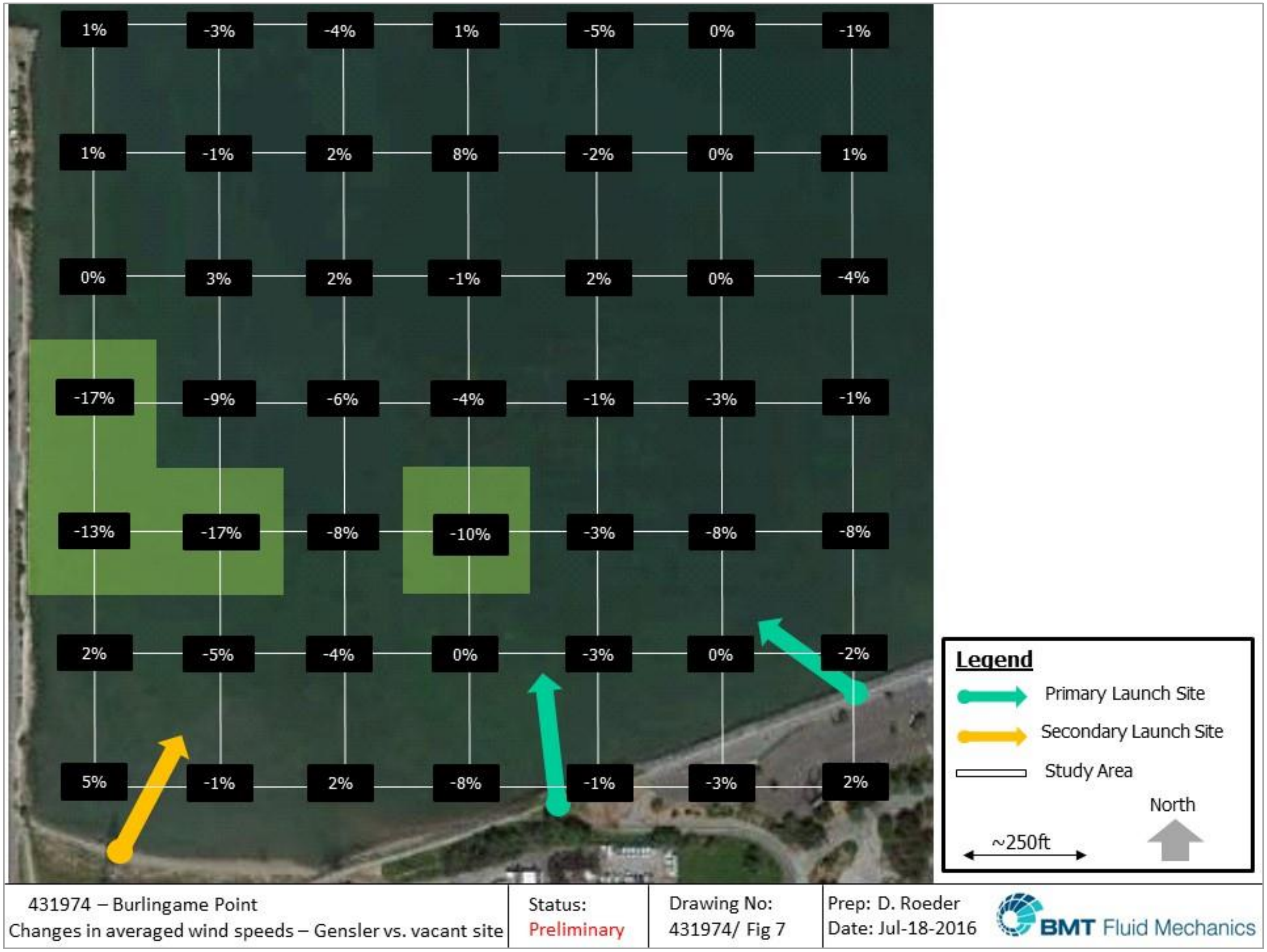


Figure 8: Changes in mean wind speeds (West) – Gensler Scheme vs. Entitled Scheme

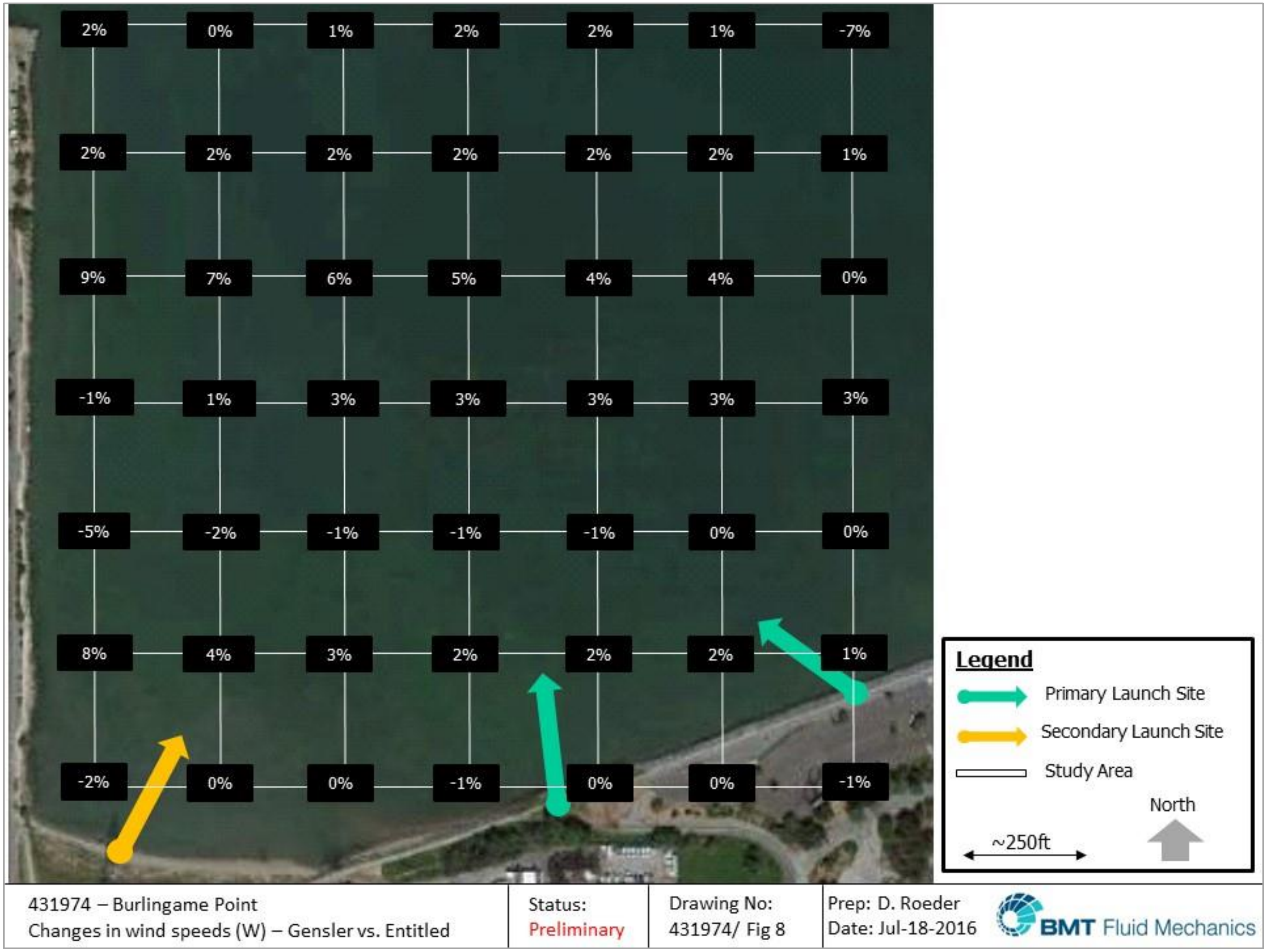


Figure 9: Changes in mean wind speeds (West-northwest) – Gensler Scheme vs. Entitled Scheme

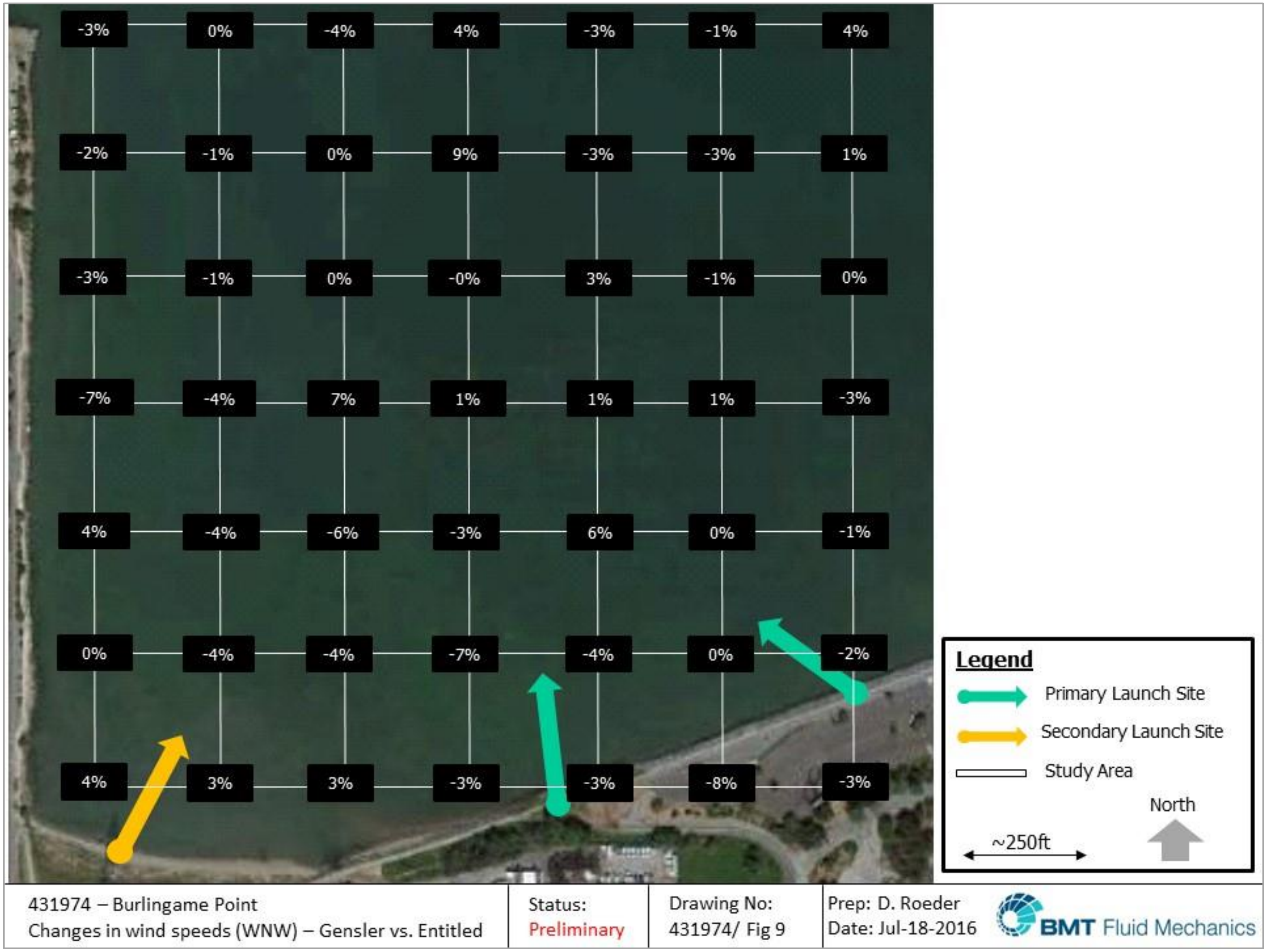
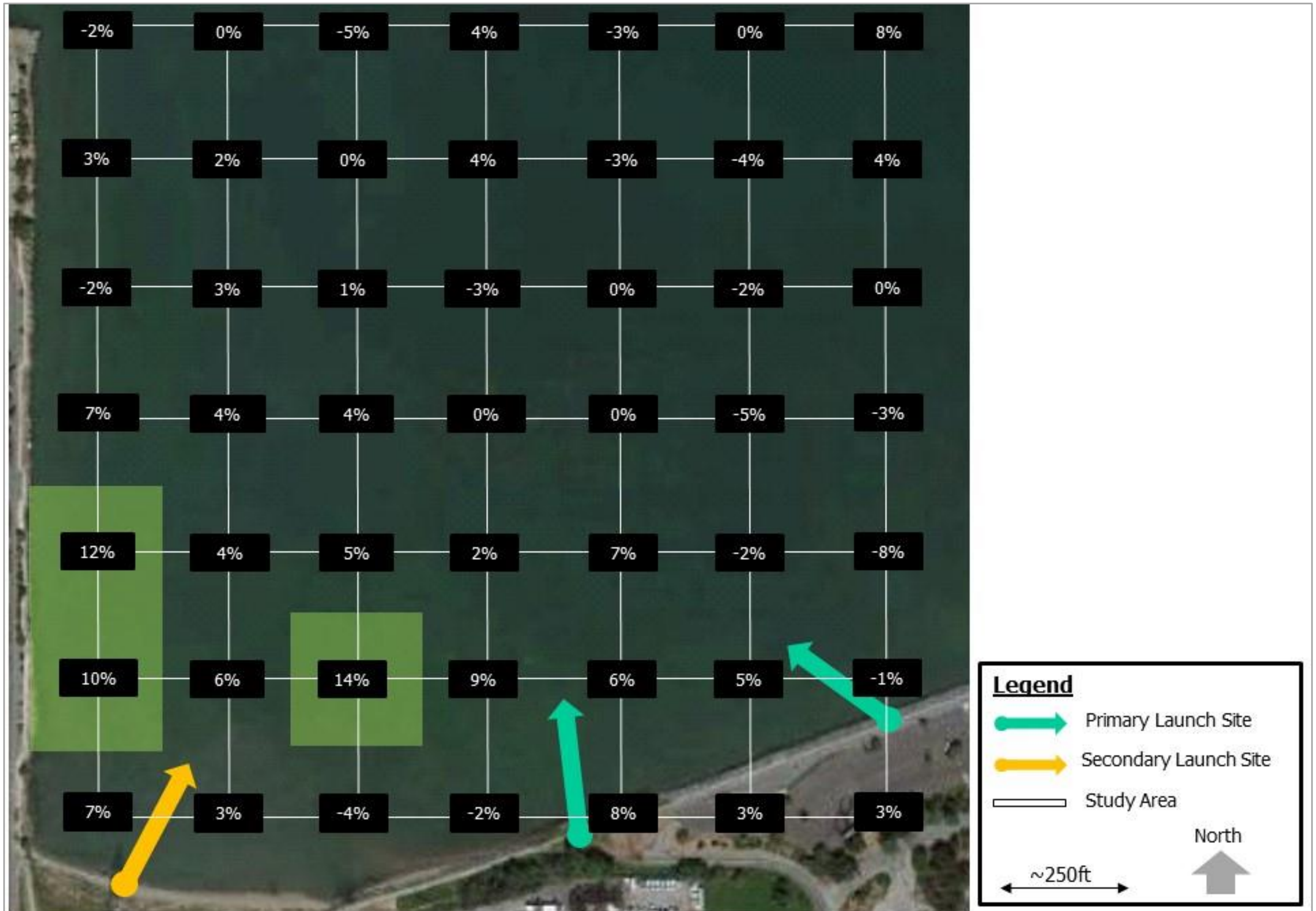


Figure 10: Changes in mean wind speeds (Northwest) – Gensler Scheme vs. Entitled Scheme



431974 – Burlingame Point Changes in wind speeds (NW) – Gensler vs. Entitled	Status: Preliminary	Drawing No: 431974/ Fig 10	Prep: D. Roeder Date: Jul-18-2016 BMT Fluid Mechanics

Figure 11: Changes in turbulence intensities (West) – Gensler Scheme vs. Entitled Scheme

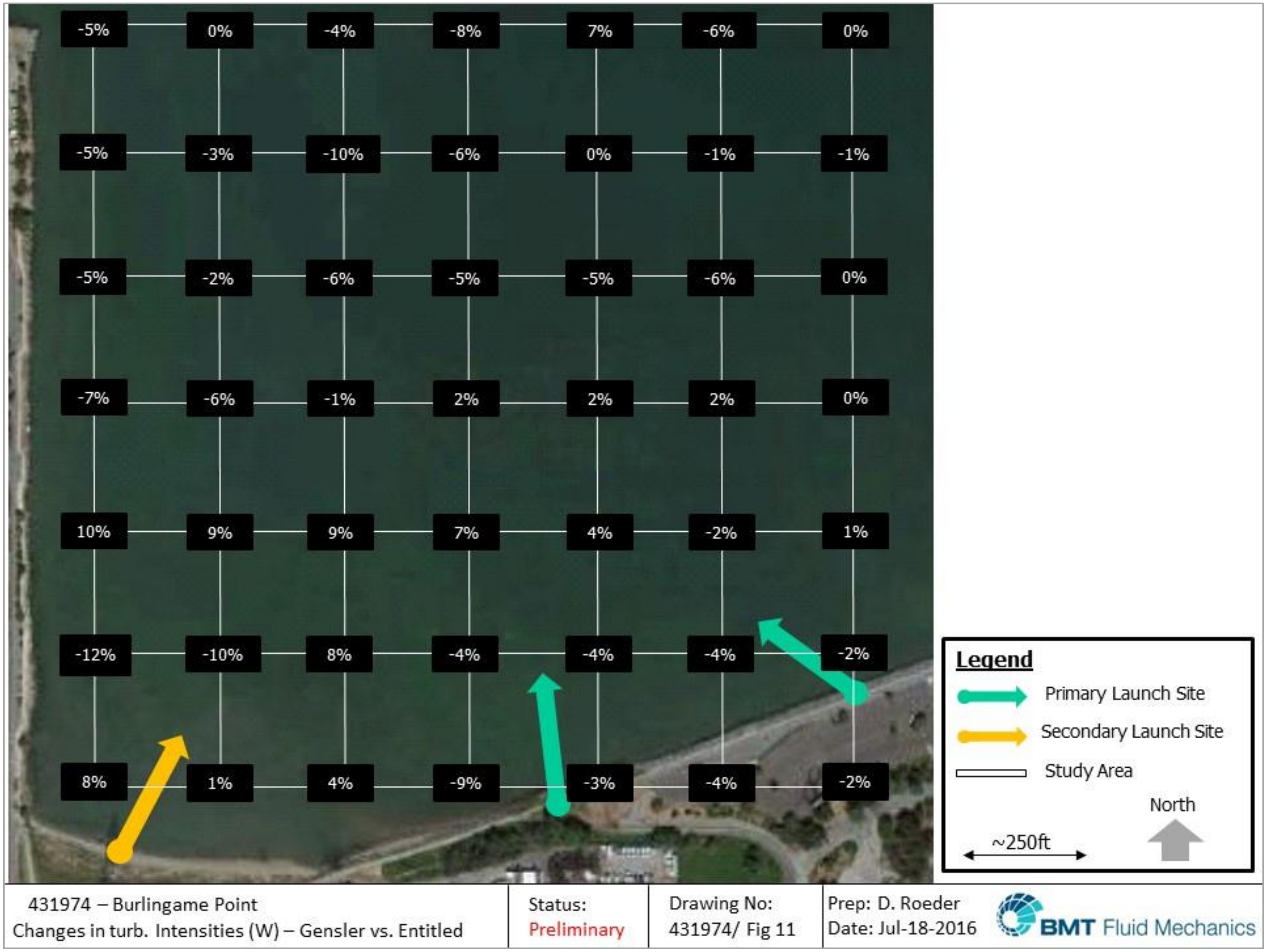
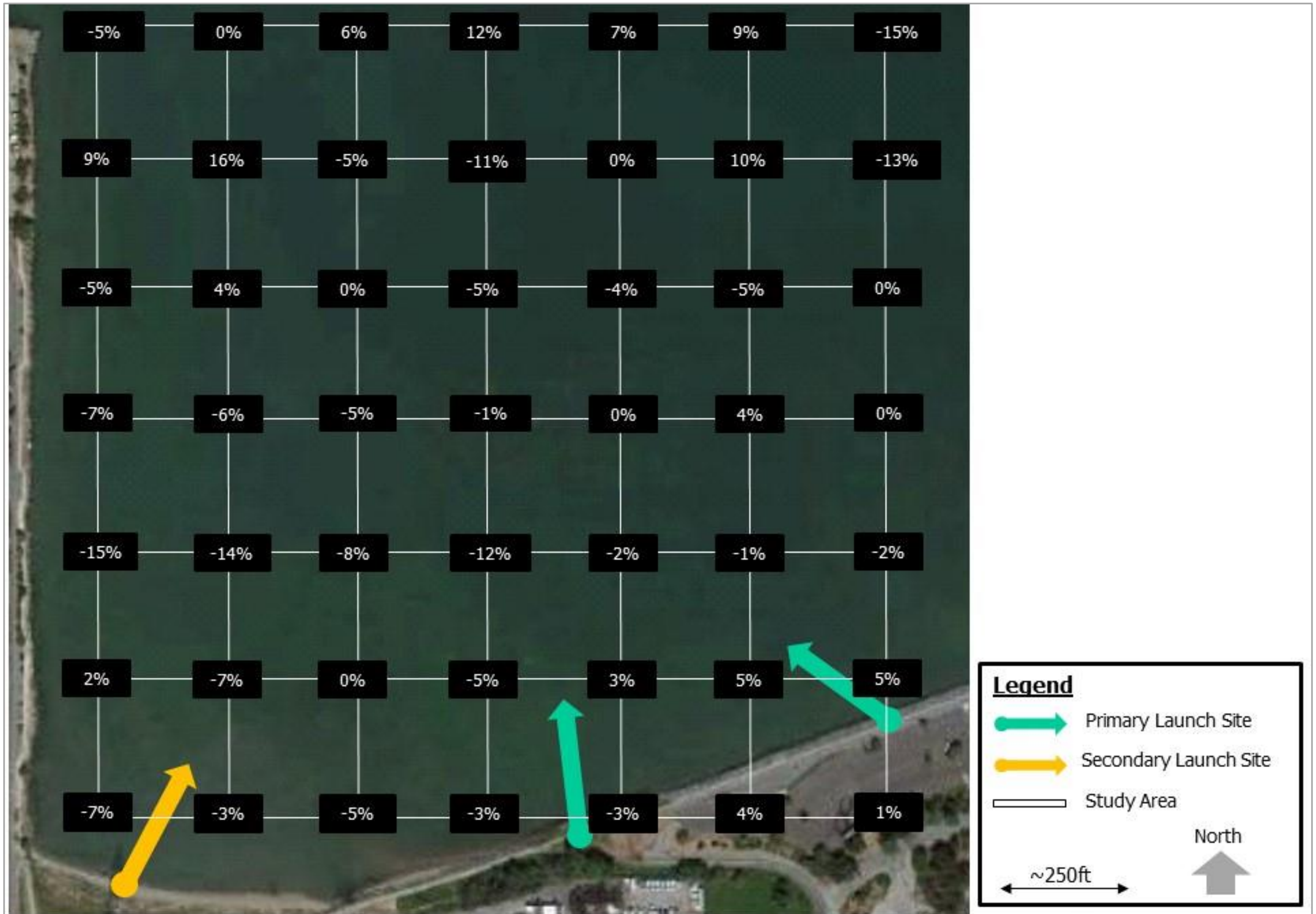


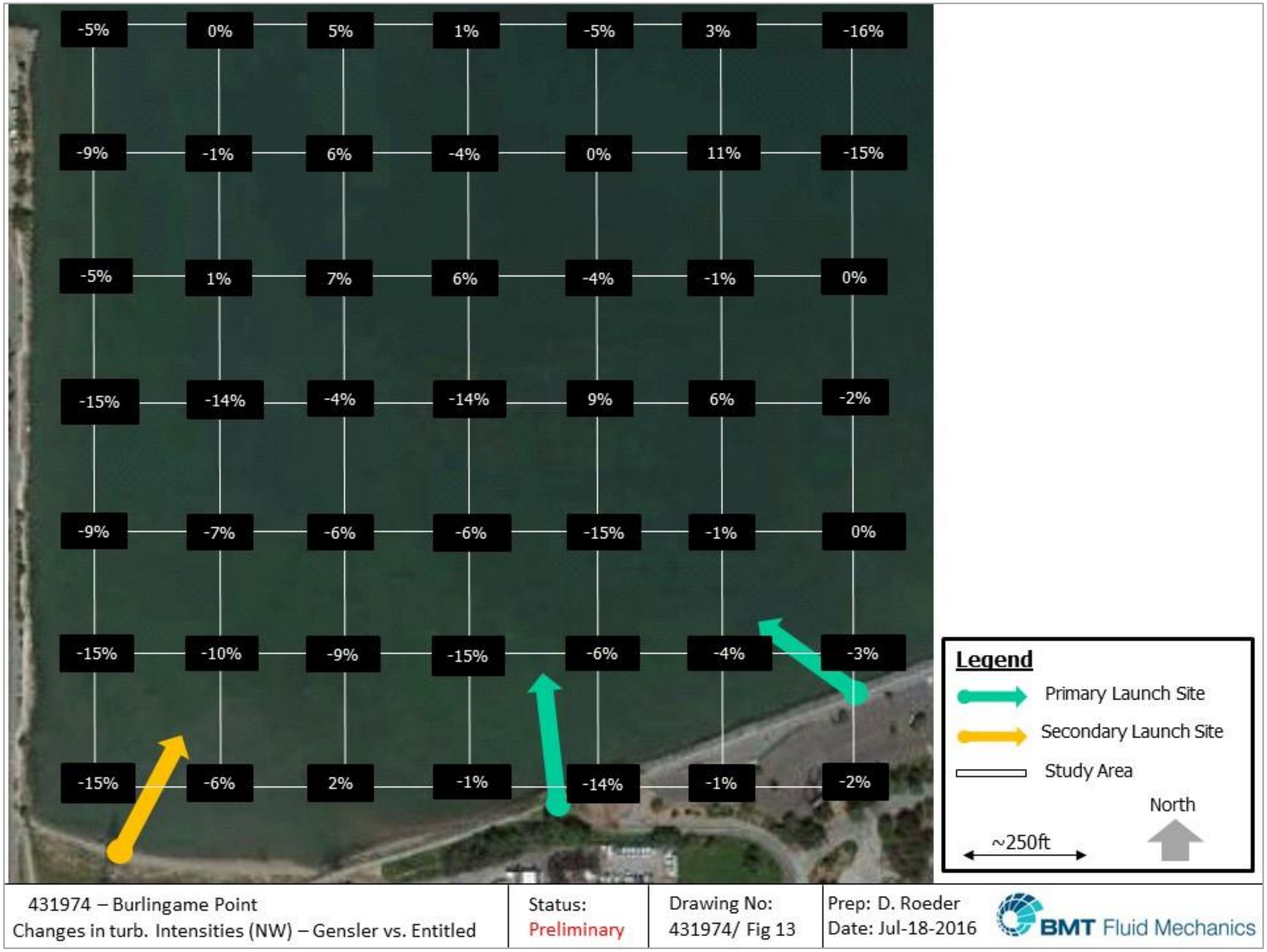
Figure 12: Changes in turbulence intensities (West-northwest) – Gensler Scheme vs. Entitled Scheme



431974 – Burlingame Point Changes in turb. Intensities (WNW) – Gensler vs. Entitled	Status: Preliminary	Drawing No: 431974/ Fig 12	Prep: D. Roeder Date: Jul-18-2016

BMT Fluid Mechanics

Figure 13: Changes in turbulence intensities (Northwest) – Gensler Scheme vs. Entitled Scheme



Appendix B-2

Wind Impact Analysis

Revised Project + Potential 350 Airport Boulevard Site

BMT Fluid Mechanics Ltd
67 Stanton Avenue
Teddington, TW11 0JY, UK
Tel: +44 (0)20 8614 4400
Fax: +44 (0)20 8943 3224
enquiries@bmtfm.com
www.bmtfm.com

TECHNICAL MEMORANDUM

From: Damien Roeder

Date: July 18th, 2016

Subject: **Burlingame Point Development Including Potential Buildings at 350 Airport Boulevard – Wind Impact Analysis**

INTRODUCTION

Background and Study Purpose

This memorandum serves to elucidate the salient results of a wind tunnel study that principally compared the downwind effects of the proposed 300 Airport Boulevard Development configurations on the wind conditions observed within the adjacent sailing and windsurfing area. The objective of the test was to conduct a relative comparison of select parameters (wind speed and turbulence intensity) between the "Gensler Scheme" and "Entitled Scheme" in an effort to determine if the collective differences in massing and architectural geometry between the two schemes would culminate in adverse effects on wind conditions downstream.

The site of the proposed development is located in Burlingame, California. It is bounded by Beach Road to the south and Airport Boulevard to the north and east, which immediately transitions to the waters of San Francisco Bay, where the primary area of interest for this study is situated.

An EIR was prepared in November 2011 for a previously proposed project on the site, namely the "Entitled Scheme" in this technical memorandum. During the processing of the EIR on the earlier project, public concern was raised that the proposed development would interfere with the predominantly westerly winds that pass over the site and then over the Bay. These winds are relied upon by recreational users to propel sail boards launched and landed at the Coyote Point shoreline and which sail the Bay to the east and north of the project site.

In response to questions about the magnitude and extent of the wind-shadow effect of the earlier proposal, a series of wind-tunnel tests were performed, in order to define the existing wind environment in the Bay to the east of the site and along the shore, as well as to determine the wind environment that would exist were that proposed project built. A primary area 1,500 ft. on a side, with an area of approximately 47.9 acres, was studied. As part of those studies, thresholds of significance with respect to wind reductions for windsurfing were developed.

The purpose of this study is to determine the impact of the current proposed project, namely the "Gensler scheme" in this technical memorandum, with respect to wind conditions, utilizing the thresholds of significant and basic protocol established by the City of the Burlingame in the earlier EIR.

Considering the spatial relationship of the project site to the Bay and the Coyote Point beach areas, the tests were conducted for three wind directions: west (270°), west-northwest (292.5°) and northwest (315°). From the aforementioned directions, the area of study lies generally downwind of the development site, whereby any effects imparted to the resulting wind flow would be most prominently observed. This technical memorandum describes the combined effects for those three wind directions.

Project Description and Location

The 300 Airport Boulevard Project is within the Anza Point Subarea of the Burlingame Bayfront Specific Plan (Specific Plan) and would construct 767,000 square feet of new office or life science uses on a currently vacant 18.12-acre site. The 300 Airport Boulevard site is currently accessible from Beach Road and is bounded by Airport Boulevard to the north, Airport Boulevard and the Bay to the east, light-industrial buildings along Beach Road to the south, and Sanchez Channel to the west.

The 300 Airport Boulevard Site is currently vacant and consists of impervious surfaces and vegetation. Previously, the site was developed as the Burlingame Drive-In Theater, with four screens and a projection/concession building, located on reclaimed land supported by perimeter dikes of concrete rubble and soil. The cinema complex operated from 1965 to 2001 and was demolished in 2002. The site was then re-graded for future construction activities.

The Gensler and Entitled schemes comprise of developments with similar heights and overall massing, however some differences are noted in the planform geometry and positions of the constituent buildings for the respective schemes. The site location and plan views of the proposed development configurations are illustrated in Figures 1 to 3.

The surrounding areas are currently used by various commercial businesses and office spaces. There are several commercial buildings located on the southern boundary of the site and across Beach Road. In addition, commercial properties are located across the Sanchez Channel to the west.

To the south and further to the east of the site are a shoreline trail and the Coyote Point County Recreation Area. An important use of this beach and bay front area is the launching/landing and transit of sail boards to nearby wind surfing areas out in the Bay. Lack of wind can make the launchings/landings more difficult, as well as hinder transit of the near shore portion of the Bay in reaching the primary wind surfing areas off shore.

With respect to previous tests conducted by BMT, two additional potential buildings, 350 Airport Boulevard, were added to the surrounding buildings. These two buildings (approximately 100ft. in height) are located to the north of the development, across Airport Boulevard (see Figures 2 and 3).

EXISTING SETTING

Large buildings and structures will affect the nearby wind environment and have residual effects that reach downwind from the building site. Buildings that are much taller than the surrounding buildings or vegetation intercept and redirect winds that might otherwise flow overhead, and bring them down the vertical face of the building to ground level, where they create ground-level wind and turbulence. These redirected winds can be relatively strong and also relatively turbulent, and can be incompatible with the intended uses of the ground-level spaces around the building.

Wind speeds will be reduced downwind of buildings. In the project vicinity, existing buildings and vegetation tend to slow the winds near ground level, due to the friction and drag of the structures and vegetation themselves. The site is currently vacant, but there are buildings (approximately 80 ft.) north of the Bayshore Freeway that lie more than 1,000 ft. away from the eastern boundary of the site. In addition, the two buildings mentioned previously to the north of the development have the potential to impact the wind conditions for the considered area.

Existing Climate and Wind Conditions

Wind conditions at the site are reasonably well represented by wind data taken at San Francisco Airport (SFO) meteorological station, approximately 3 miles to the north of the project site.

Previous wind studies have been carried out to analyse the wind climate and conditions for the project site and to establish the general occurrence of winds at the site during the time of interest for sail boarding (late spring well into fall, April 1st through November 1st) from 6:00am until 7:00pm (mainly during the daylight hours). The most frequent and strongest winds occur at three wind directions, as follows: west (270°), west-northwest (292.5°) and northwest (315°).

Coyote Point Recreation Area Shoreline and Bay

Wind speed effects on land and water-related uses of the Coyote Point Recreation Area shoreline and Bay areas vary with use. Swimmers may or may not appreciate the wind, and will require some added effort in swimming against the wind. Board sailors require wind, and the more proficient the sailor, the more wind is preferred. Because the best board sailing areas are well over a mile from shore, sail boarders require wind to reach those sailing areas and to return safely. With the existing conditions, the known near-shore “wind-shadow” is viewed as an annoyance, because it hinders launching and landing of boards and slows transit to the primary off-shore sailing area. The primary launch area is the beach nearest the parking areas of the Coyote Point Recreation Area. Boards launched there proceed out to the north, avoid the pilings used to delineate the swimming area, and then move into the Bay. A secondary launch area is the beach near the Airport Boulevard bulkhead. At this location nearest the Project, wind surfers park on adjacent public streets in the surrounding area and access the water at the nearest beach location. Boards launched from that beach would move to the northeast, to avoid the wind shadow from the bulkhead (or berm) structure and the nearby buildings on Beach and Lang Roads, and then would move northward into the Bay. The primary and secondary launch areas are shown in Figure 4.

There are no specific criteria for minimum wind speeds to support “good” sailing. Rather, it appears to be the case that the more wind, the better. Any action that resulted in substantial new wind-shadow within the primary wind surfing areas, or in launching and landing sites or transit lanes would be a material detriment to the utility of the Coyote Point Recreation Area and Bay as an important wind-surfing area. The City of Burlingame considered these recreational wind surfing needs in creating community wind standards set out in the Bayfront Specific Plan. These community wind standards act as guidelines for developments in the area to avoid surpassing specified wind-speed reductions and result in unacceptable impacts to recreational wind surfing needs.

METHODOLOGY

Model and Wind Testing Protocols

A 1:300 scale model of the project site and surrounding vicinity, as well as a substantial downwind reach into the Bay was constructed in order to simulate the project and its existing context. The model was sized to contain a radius of approximately 2170 ft. from the center of the wind tunnel model. The scaled model of the proposed Project and surroundings was constructed by BMT Fluid Mechanics (BMT) and tested in BMT's Boundary Layer Wind Tunnel in Teddington, United Kingdom.

Wind-tunnel tests were conducted for two configurations: 1) the previous Entitled Scheme; 2) the proposed Gensler Scheme. Each scenario wind-tunnel tested for each of three wind directions: west (270°), west-northwest (292.5°) and northwest (315°).

The test procedure consisted of orienting the selected configuration of the model in the boundary layer wind-tunnel and measuring the wind speed at each of a regular grid of test locations with “Irwin probes”. The boundary layer wind tunnel has a test section 15.7 ft. wide, 7.9 ft. high and 49.2 ft. long with a 14.4 ft. diameter multiple plate turntable and a remotely controlled 3-dimensional traversing system. The blockage ratio for the current project will be less than 5%, which will not cause any impact to the wind tunnel studies. The operating wind speed range is 0.45 – 100.7 mph. The turbulent boundary layer is set up using an arrangement of roughness elements distributed over the floor of the wind tunnel, vertical posts and a two-dimensional barrier placed at the entrance to the test section to simulate the wind profile and turbulence intensity at the proposed site.

Wind speed measurements were made using so-called “Irwin probes”, capable of measuring fluctuating pressure differences that are calibrated against wind speed. A system of probes running simultaneously was used to obtain results from up to 49 locations at a height corresponding to 5 ft. at full scale. Measurements were taken for the three wind directions in increments of 22.5°.

Data were recorded for 60 seconds for each wind direction to determine the mean and 3-second gust wind speeds. The turbulence intensity was derived based on the mean and 3-second gust wind speeds.

The ratio between the measured wind speeds at a height of 5 ft. above the surface level and the wind speed at the reference height, namely the “wind speed-up ratio”, was derived from the Irwin measurements. The inherent uncertainty of measurements made with the Irwin probes is approximately ±5% of the true values.

Measurement Point Grid

The test site consists of 49 measurement locations, 7 by 7 square grid, with 250 ft. spacing between each of the individual measurement points. The test grid is oriented due north-south and due east-west. The area within the 1,500 ft. by 1,500 ft. test grid is 51.65 acres. A diagonal cut at the southeast corner reduces the area of bay surface to approximately 47.9 acres, providing adequate coverage of the windsurfing and sailing areas within the Bay area to the east of the proposed development. The study area and the measurement locations layout are illustrated in Figure 4.

Note that the wind tunnel model did not involve the utilization of any landscaping or wind mitigation elements, as the primary goal was to investigate the effects directly related to the implementation of the proposed development schemes.

Wind Evaluation Criteria

There were no established criteria to define the level of reduction in wind speed that would constitute a “significant adverse impact” under the California Environmental Quality Act (CEQA) for wind surfing at Coyote Point Recreation Area or in the Bay.

The earlier EIR for a previously-proposed development on the project site utilized the standard for significance, which is reflected in the Bayfront Specific Plan community wind standards:

> *"A reduction of 10% or more in wind speeds at irreplaceable launching and landing sites, or a reduction in wind speed of 10% or more over large portions of transit routes or primary board sailing areas would be a significant adverse impact."*

The wind tunnel test results were processed and analysed in conjunction with the application of the abovementioned significance criteria. Notably, for turbulence intensity, there is an absence of an equivalent criterion, however a measured increase is assumed to be an adverse impact.

Test Output

Each wind-tunnel measurement results in a ratio that relates to the measured speed of surface-level wind (at 5 ft. height) to the wind speed at reference height. These ratios, namely "wind speed-up ratios", are the output data from the wind tunnel tests. The ratios are usually numbers that are less than 1.00, because the wind speeds at the ground level are usually substantially less than the wind speed at the reference height.

The wind speed-up ratios for the three wind directions for each measurement point were averaged. The resulting averaged ratios for the Gensler Scheme were divided by the averaged ratios for the Entitled Scheme for each measurement point. The result is the percent change in wind speed that would result from the change between two configurations.

For the purposes of this study, the results are presented as a relative comparison, with the Entitled Scheme selected as the reference configuration, i.e.:

- If the implementation of the Gensler scheme results in a reduction in the averaged wind speed-up ratios, this is indicated by a negative value in Figure 5

- If the implementation of the Gensler scheme results in an increase in the averaged local turbulence, this is indicated by a positive value in Figure 6 (as a reference)

As such, any indicated increase or decrease in the measured quantities of the performance parameters is not representative of an isolated feature inherent to the individual schemes; instead it correlates to the effects when transitioning from the Entitled Scheme to the Gensler Scheme.

RESULTS

The test results (percentage of changes in the mean wind speeds ratios and turbulence intensities averaged over three wind directions) are presented in Figures 5 and 6. The pertinent observations are summarised as follows:

1. *When averaged across the three wind directions tested, the maximum reduction in mean wind speeds (with the implementation of the Gensler scheme against the Entitled Scheme)*

observed is 4%, whereas approximately 80% of the test locations display unchanged or increase (up to 4%) in recorded wind speeds ratios

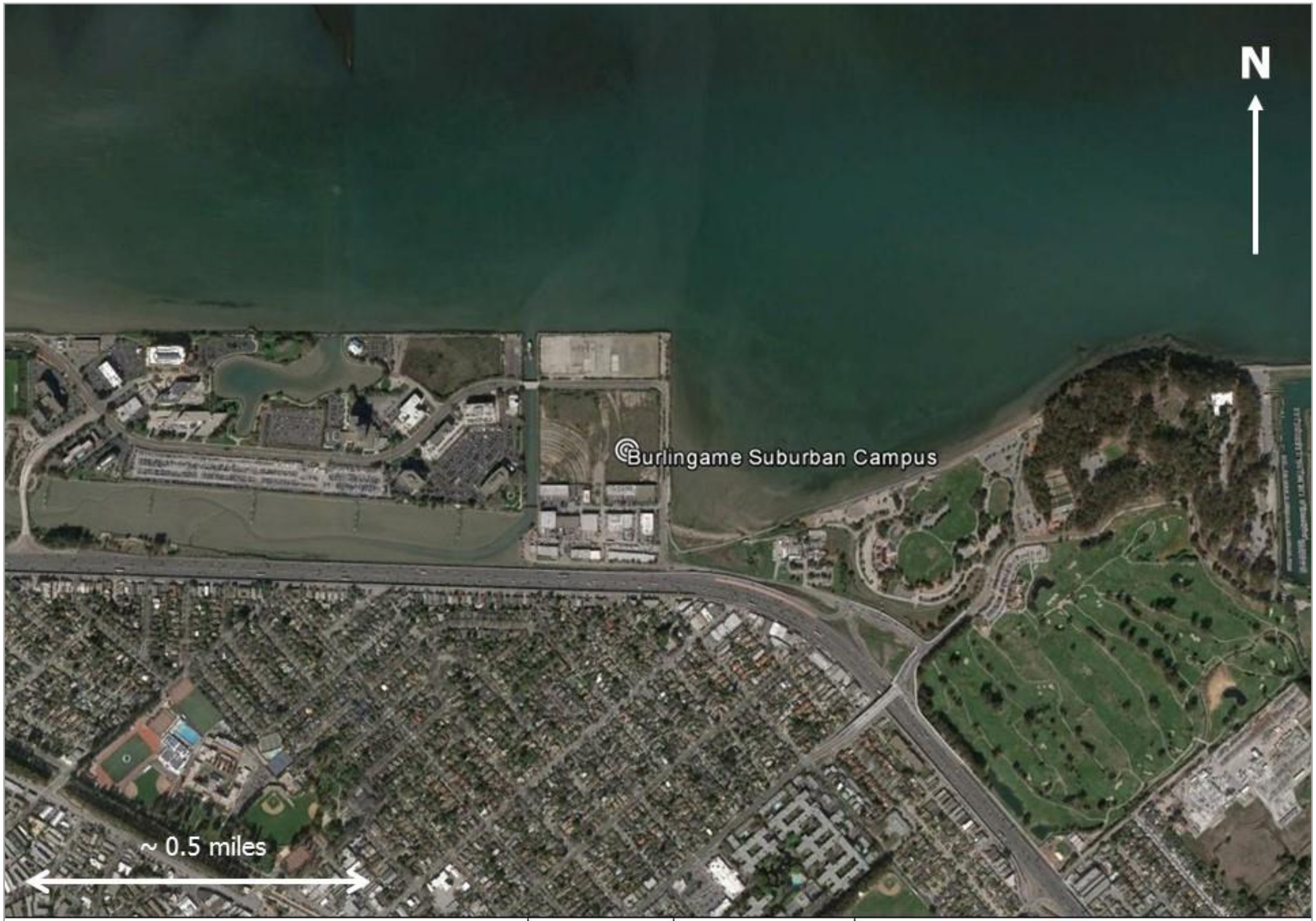
2. *Conversely, approximately 25% of the test locations experience an averaged increase in turbulence intensity (up to an 5% difference), whilst the remaining test locations experience an averaged unchanged or decrease in turbulence intensity compared to the Entitled Scheme.*

The test results show that the difference in wind speeds associated with recreational activities native to the area, such as windsurfing and sailing, between the Gensler Scheme and the Entitled Scheme is less-than-significant.

It is understood wind tunnel tests had been carried out previously to prove that the impacts of the Entitled Scheme on the recreational boardsailing in the vicinity of the project site would be less-than significant as defined by the CEQA significance criterion. Figure 7 shows the average wind speed changes of the Gensler Scheme against the existing vacant site by interpolating the test results for the current and previous wind tunnel studies. It can be seen the wind shadow of the Gensler Scheme, defined by a 10% wind reduction, coincides with the same portions of transit routes as the EIR test results for the Entitled Scheme in November 2011, but does not contain launching / land sites or primary board sailing areas. Therefore, it is reasonably concluded that, the Gensler development scheme would also not result in a reduction of 10% or more in wind speeds at “irreplaceable launching and landing sites”, “primary board sailing areas” or “large portions of transit routes”. With the Gensler Scheme the project impacts on the recreational boardsailing in the vicinity of the project site would be less-than significant.

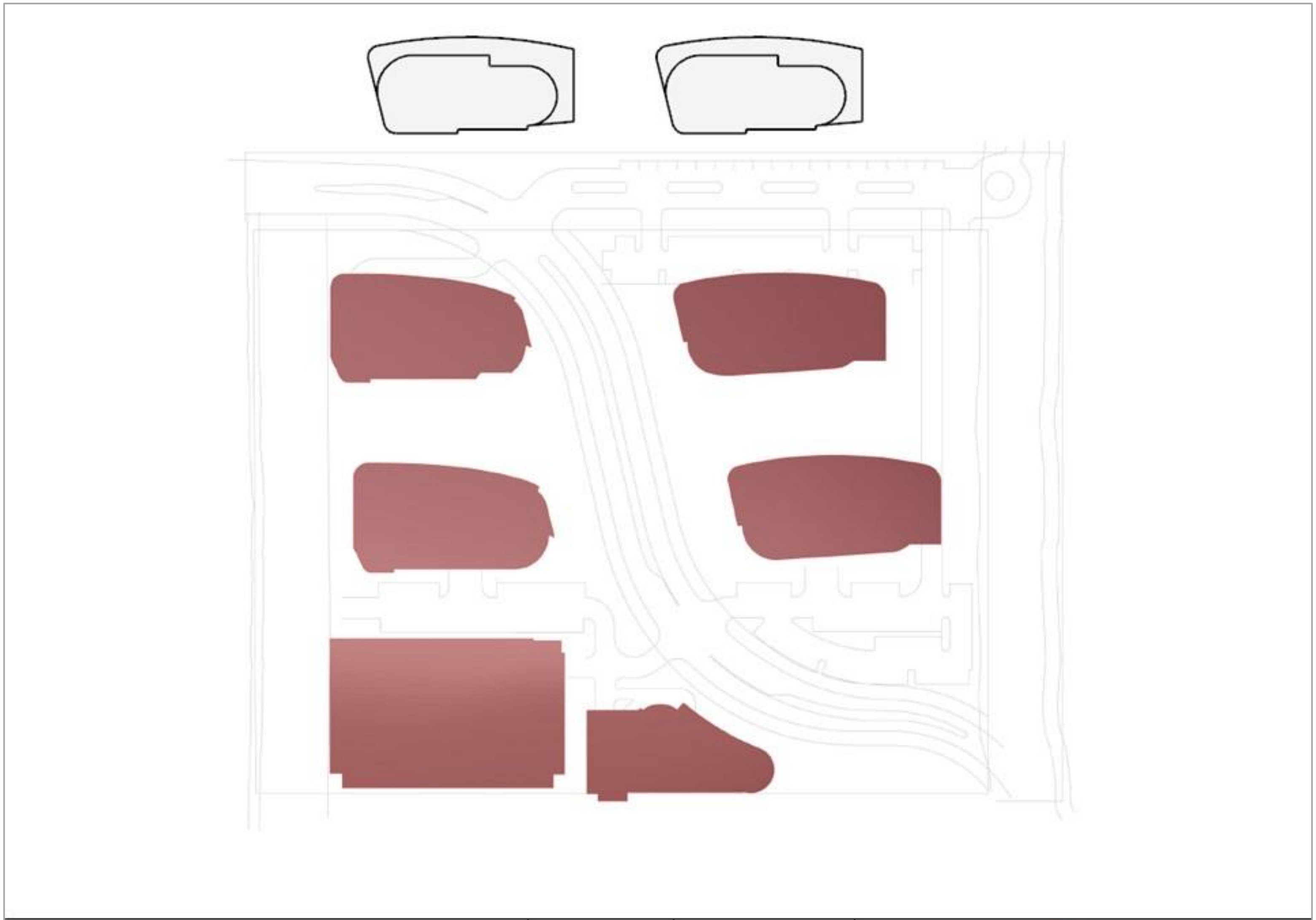
The relative comparison of the Gensler Scheme with the Entitled Scheme, in wind speed-up ratios and local turbulence, for each wind direction (west, west-northwest and northwest), are shown in Figures 8 to 10 and Figures 11 to 13, respectively. A positive value indicates an increase while a negative value indicates a reduction in wind speed or turbulence. For the wind coming from the west, there is no significant difference, compared to the averaged changes in wind speeds, near the primary launch sites, but slightly less wind speeds increment near the secondary launch site. For the wind coming from the west-northwest, the wind speeds at the south of the wind surfing site slightly reduce, but the changes in wind speeds near the secondary launch site slightly increase. Slightly higher wind speeds increment is presented at the south of the wind surfing site for the wind coming from the northwest, but there is no noticeable difference in wind speeds changes near the primary and secondary launch sites.

Figure 1: Site Location of the proposed Burlingame Point development



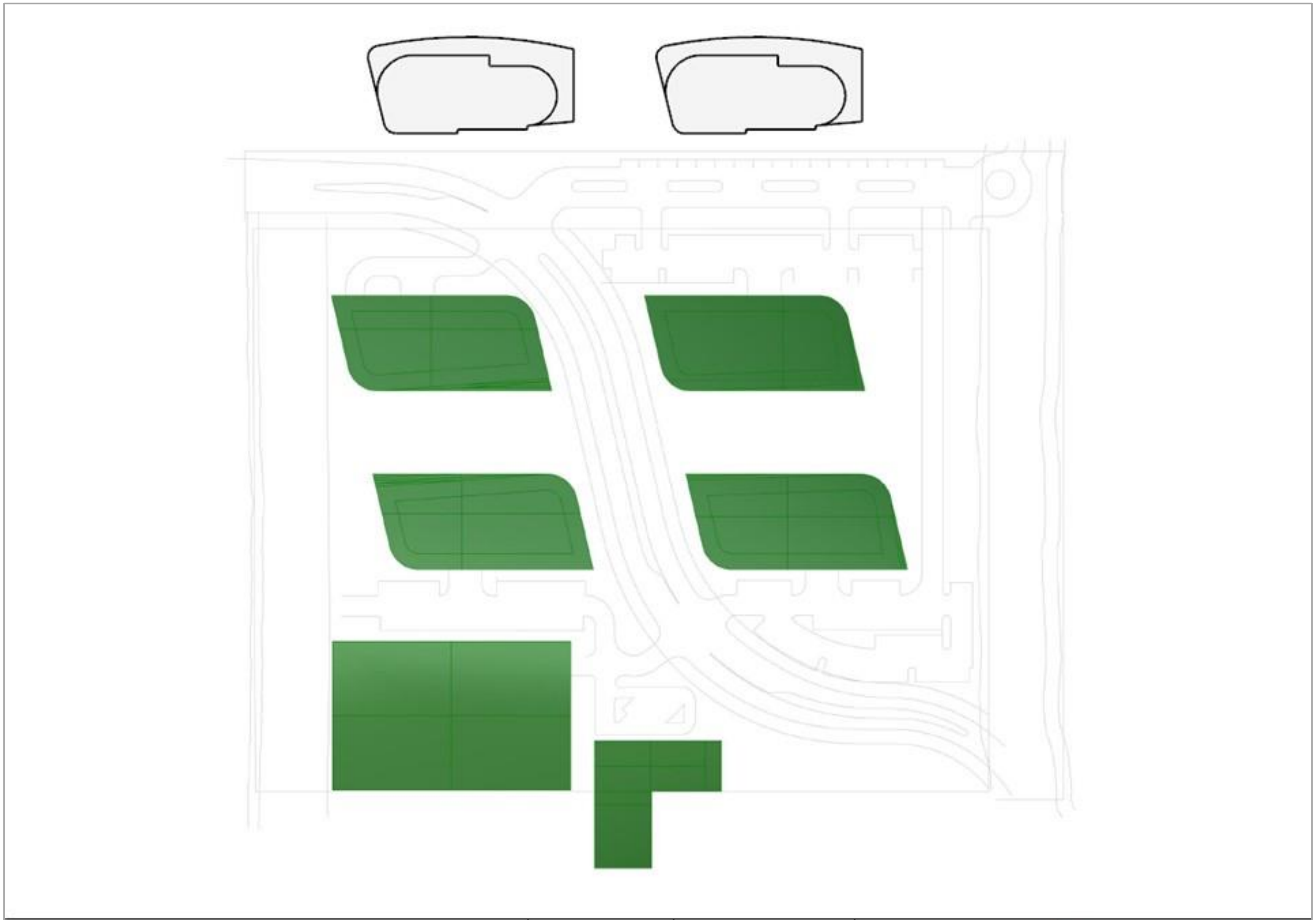
431974 – Burlingame Point Site Location	Status: Preliminary	Drawing No: 431974/ Fig 1	Prep: D. Roeder Date: Jul-18-2016 BMT Fluid Mechanics

Figure 2: Plan view of the proposed development – Entitled Scheme



431974 – Burlingame Point Plan view of the development – Entitled Scheme	Status: Preliminary	Drawing No: 431974/ Fig 2	Prep: D. Roeder Date: Jul-18-2016	BMT Fluid Mechanics

Figure 3: Plan view of the proposed development – Gensler Scheme



431974 – Burlingame Point Plan view of the development – Gensler Scheme	Status: Preliminary	Drawing No: 431974/ Fig 3	Prep: D. Roeder Date: Jul-18-2016	BMT Fluid Mechanics

Figure 4: Wind direction definition and test point locations

Figure 5: Averaged changes in mean wind speeds – Gensler Scheme vs. Entitled Scheme

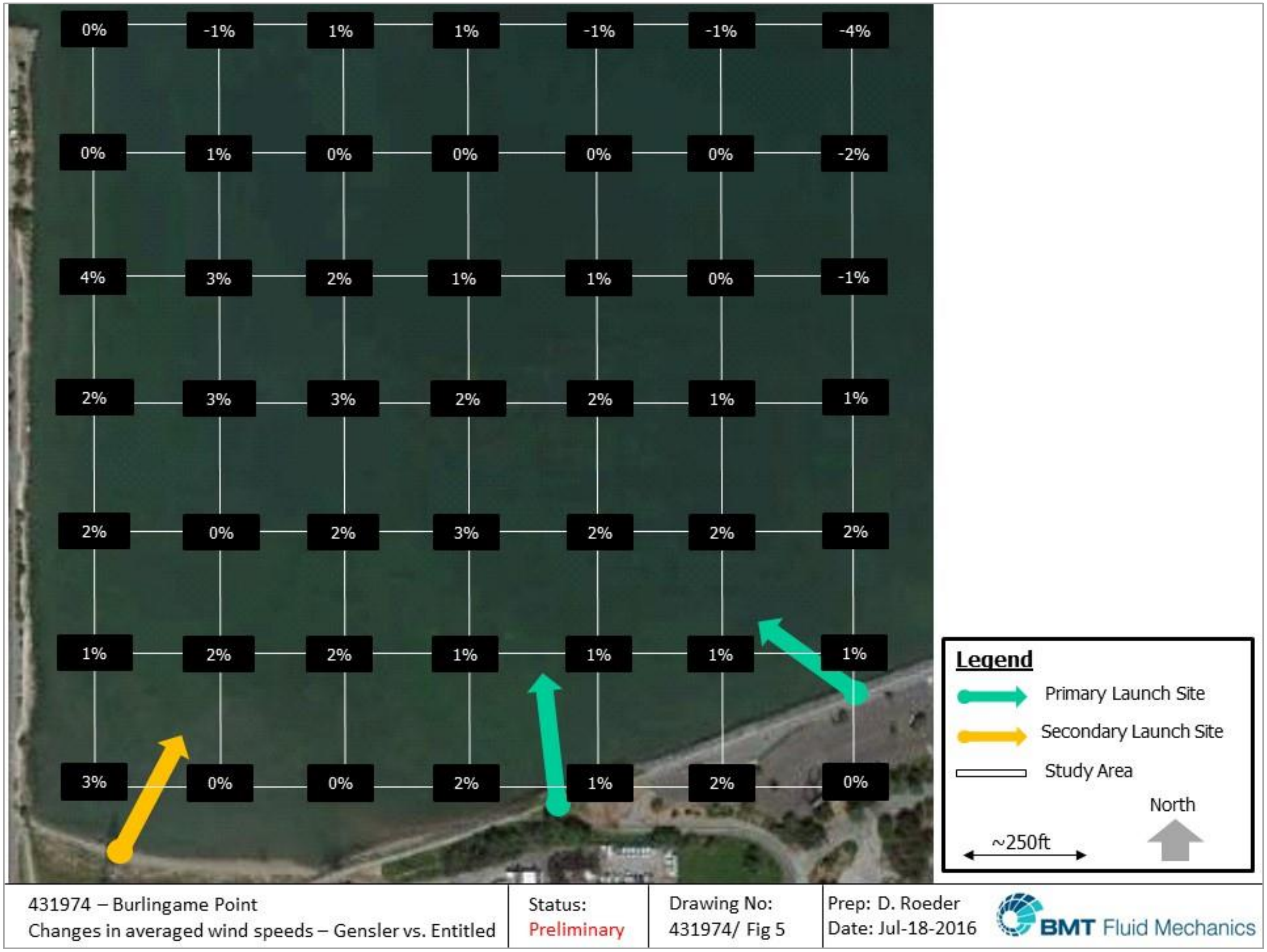


Figure 6: Averaged changes in turbulence intensities – Gensler Scheme vs. Entitled Scheme

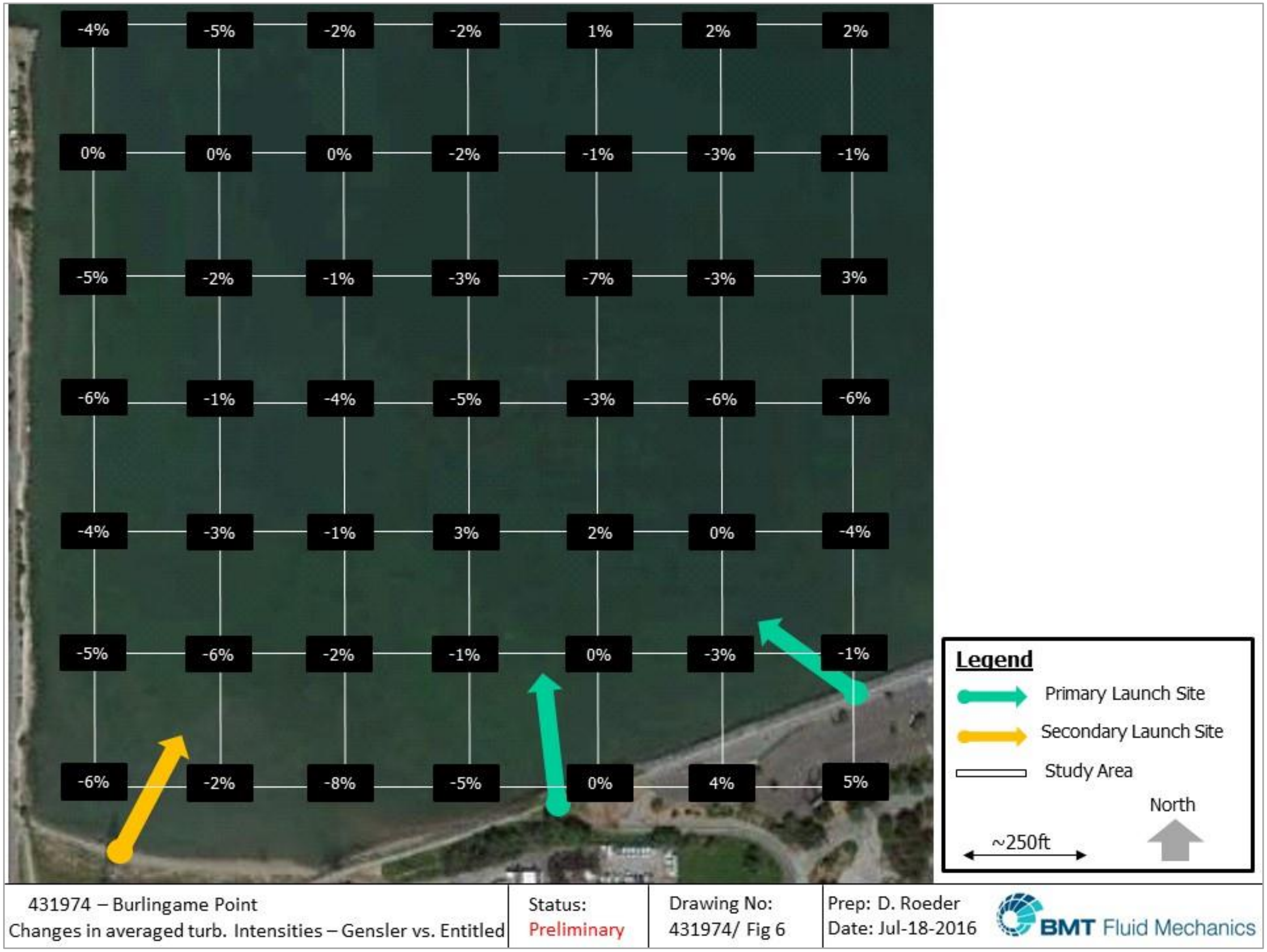
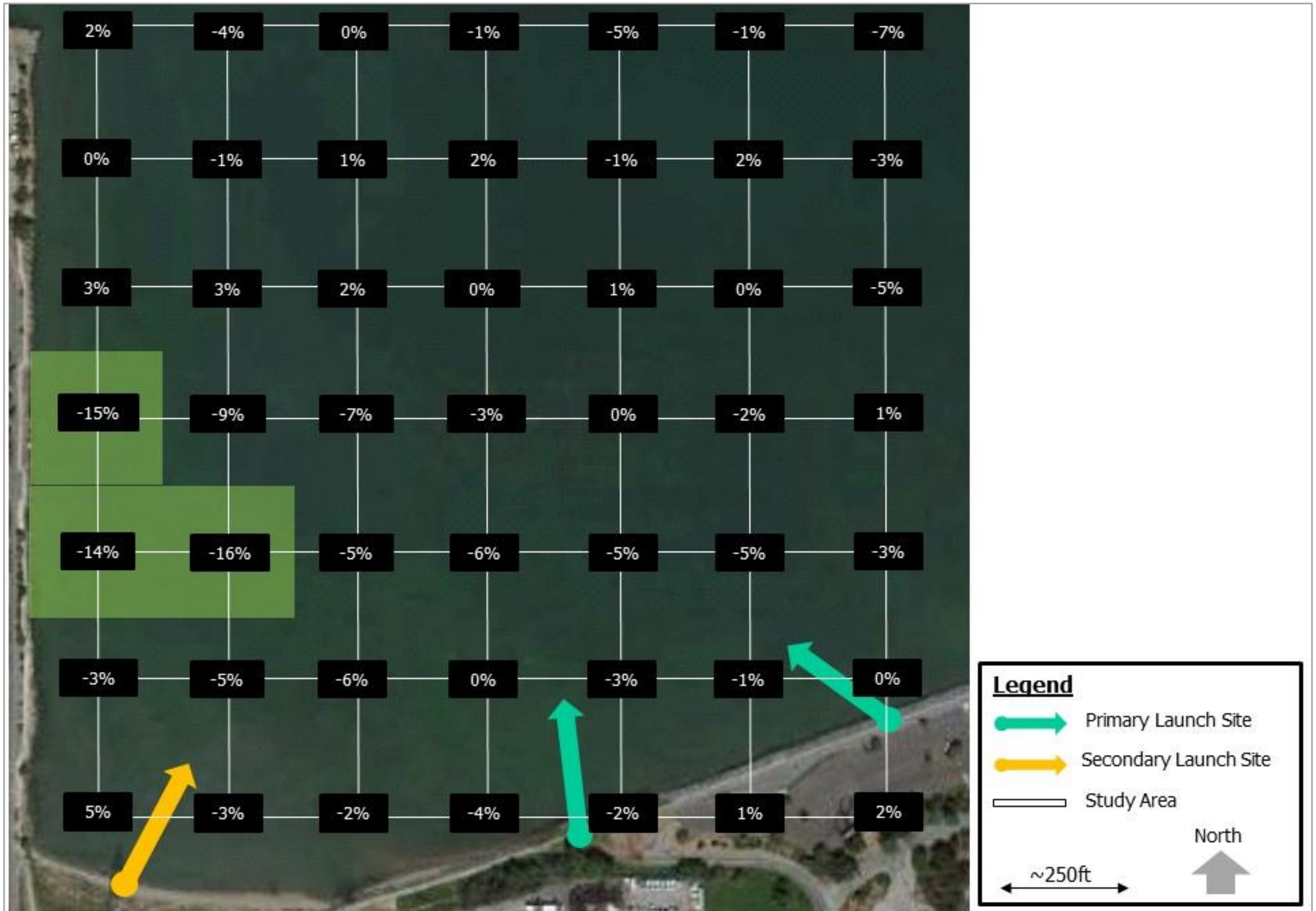


Figure 7: Averaged changes in mean wind speeds – Gensler Scheme vs. Existing Vacant Site



431974 – Burlingame Point Changes in averaged wind speeds – Gensler vs. vacant site	Status: Preliminary	Drawing No: 431974/ Fig 7	Prep: D. Roeder Date: Jul-18-2016	BMT Fluid Mechanics

Figure 8: Changes in mean wind speeds (West) – Gensler Scheme vs. Entitled Scheme

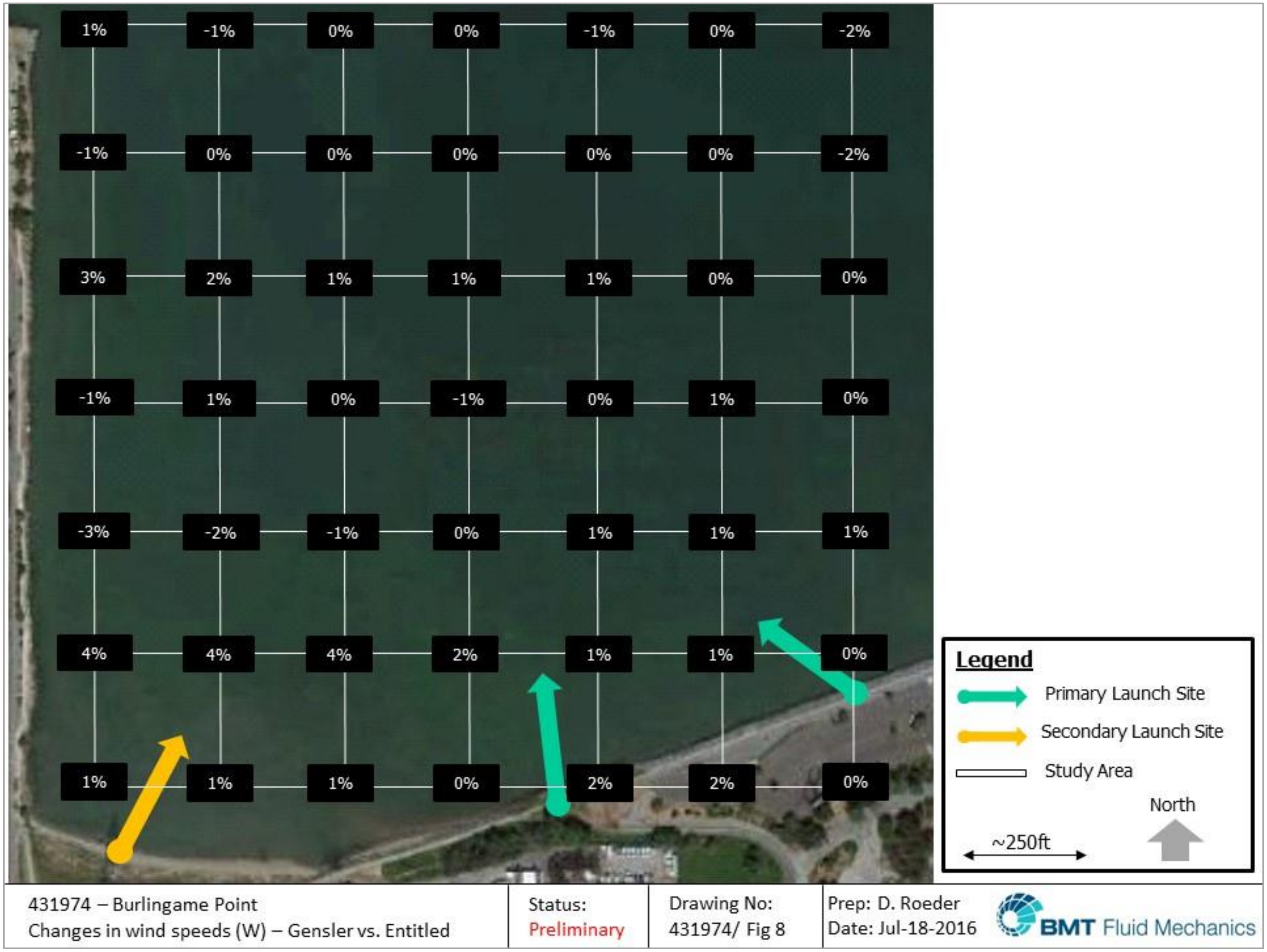


Figure 9: Changes in mean wind speeds (West-northwest) – Gensler Scheme vs. Entitled Scheme

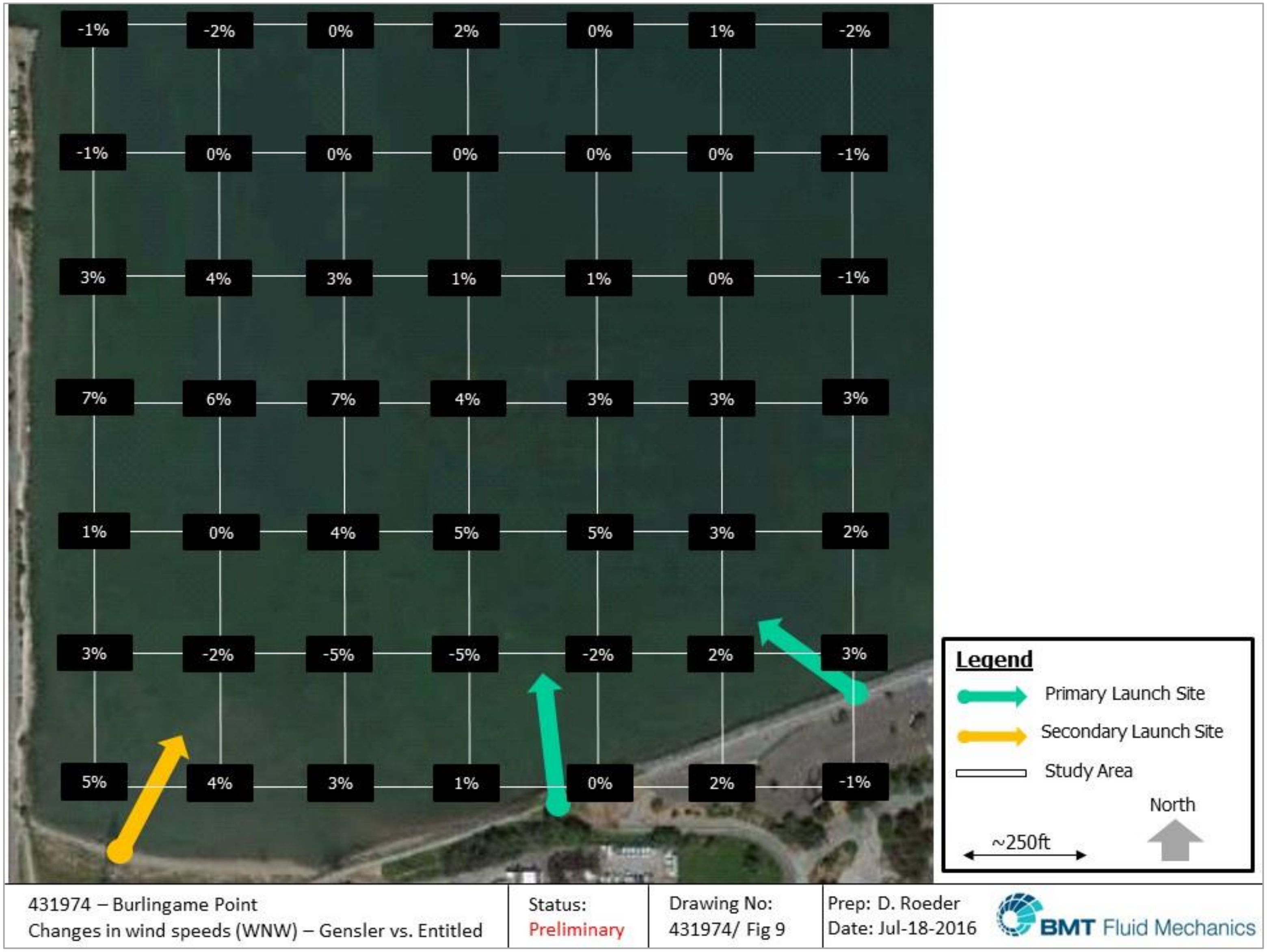


Figure 10: Changes in mean wind speeds (Northwest) – Gensler Scheme vs. Entitled Scheme

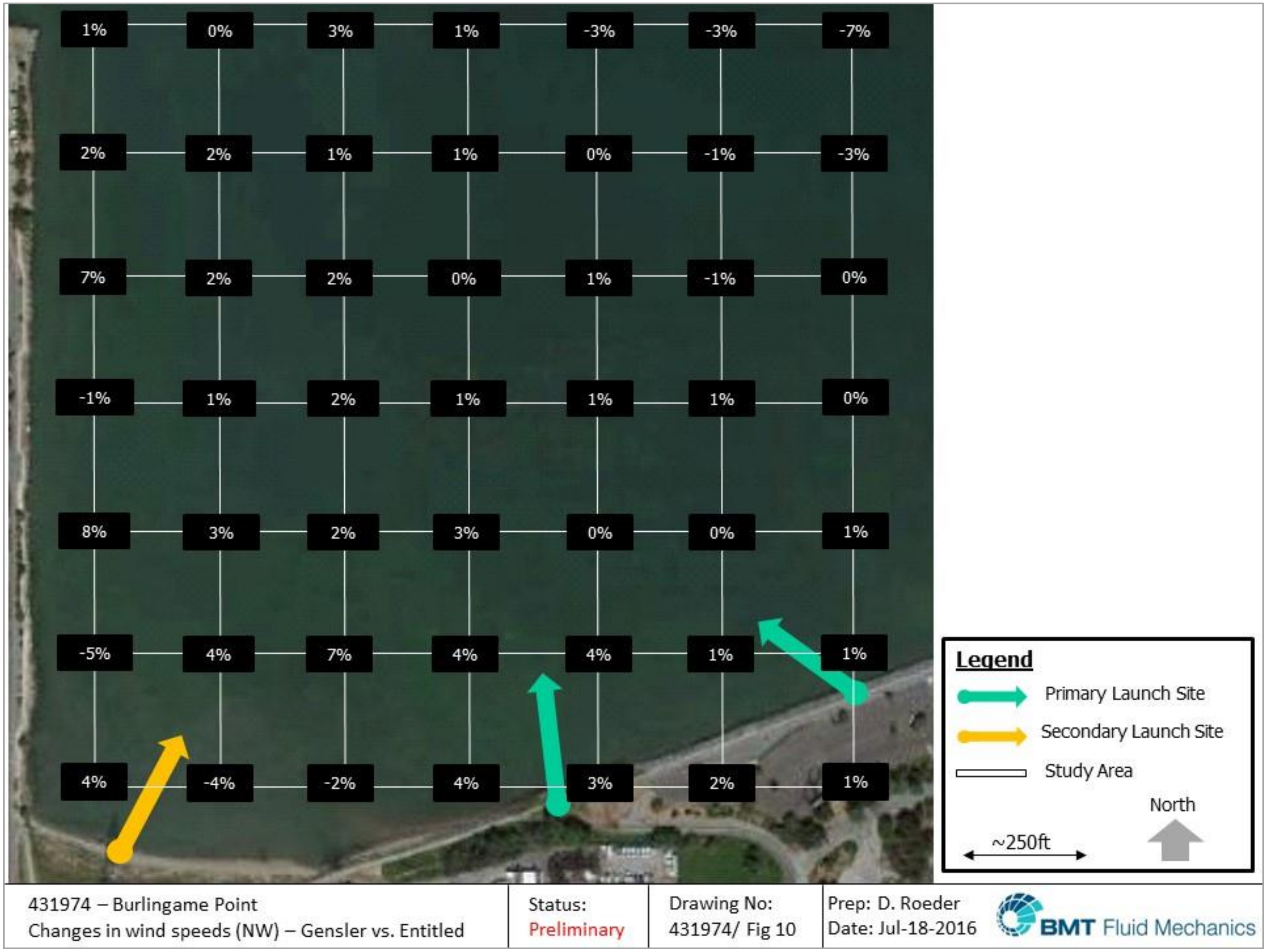
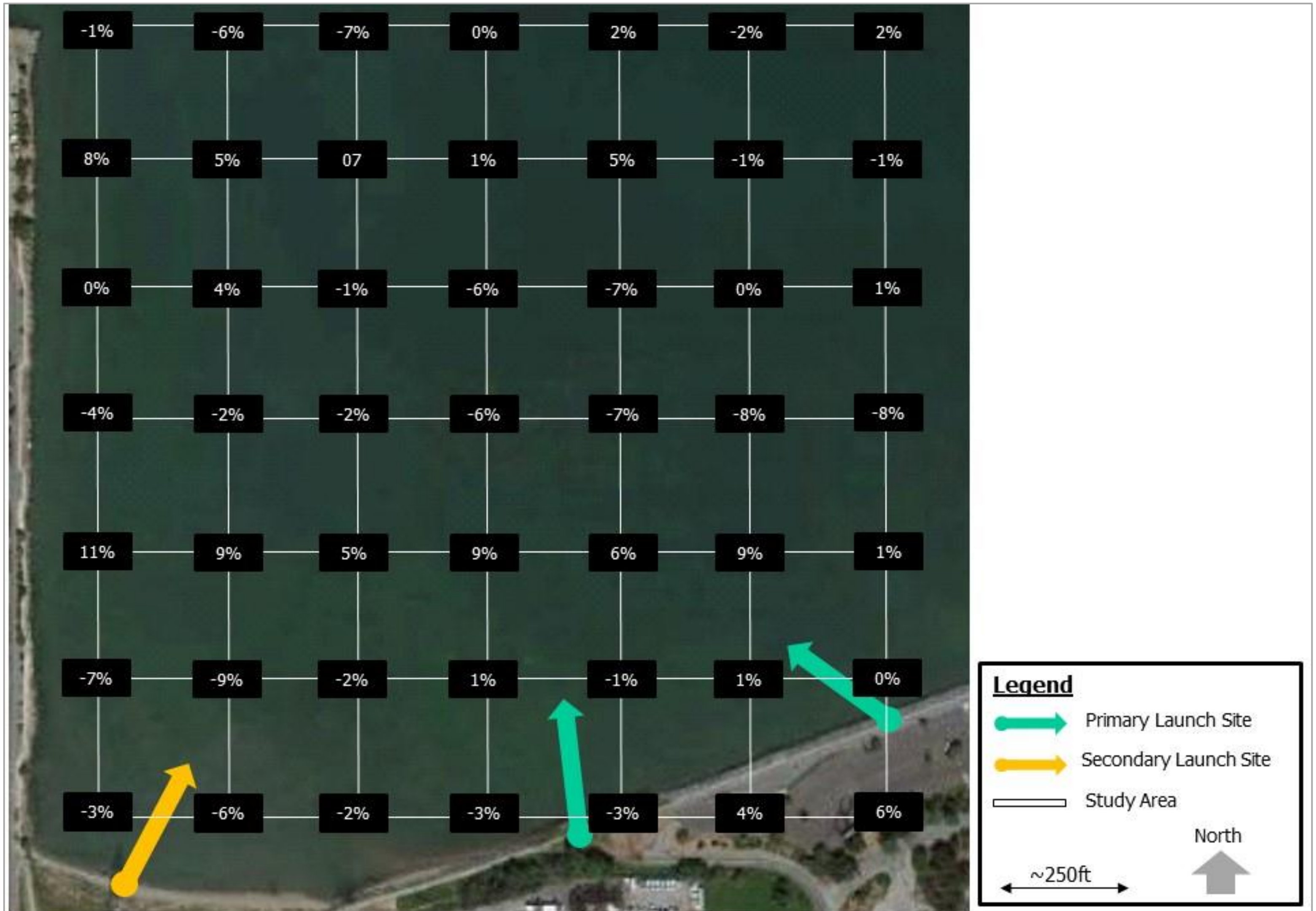


Figure 11: Changes in turbulence intensities (West) – Gensler Scheme vs. Entitled Scheme



431974 – Burlingame Point Changes in turb. Intensities (W) – Gensler vs. Entitled	Status: Preliminary	Drawing No: 431974/ Fig 11	Prep: D. Roeder Date: Jul-18-2016	BMT Fluid Mechanics

Figure 12: Changes in turbulence intensities (West-northwest) – Gensler Scheme vs. Entitled Scheme

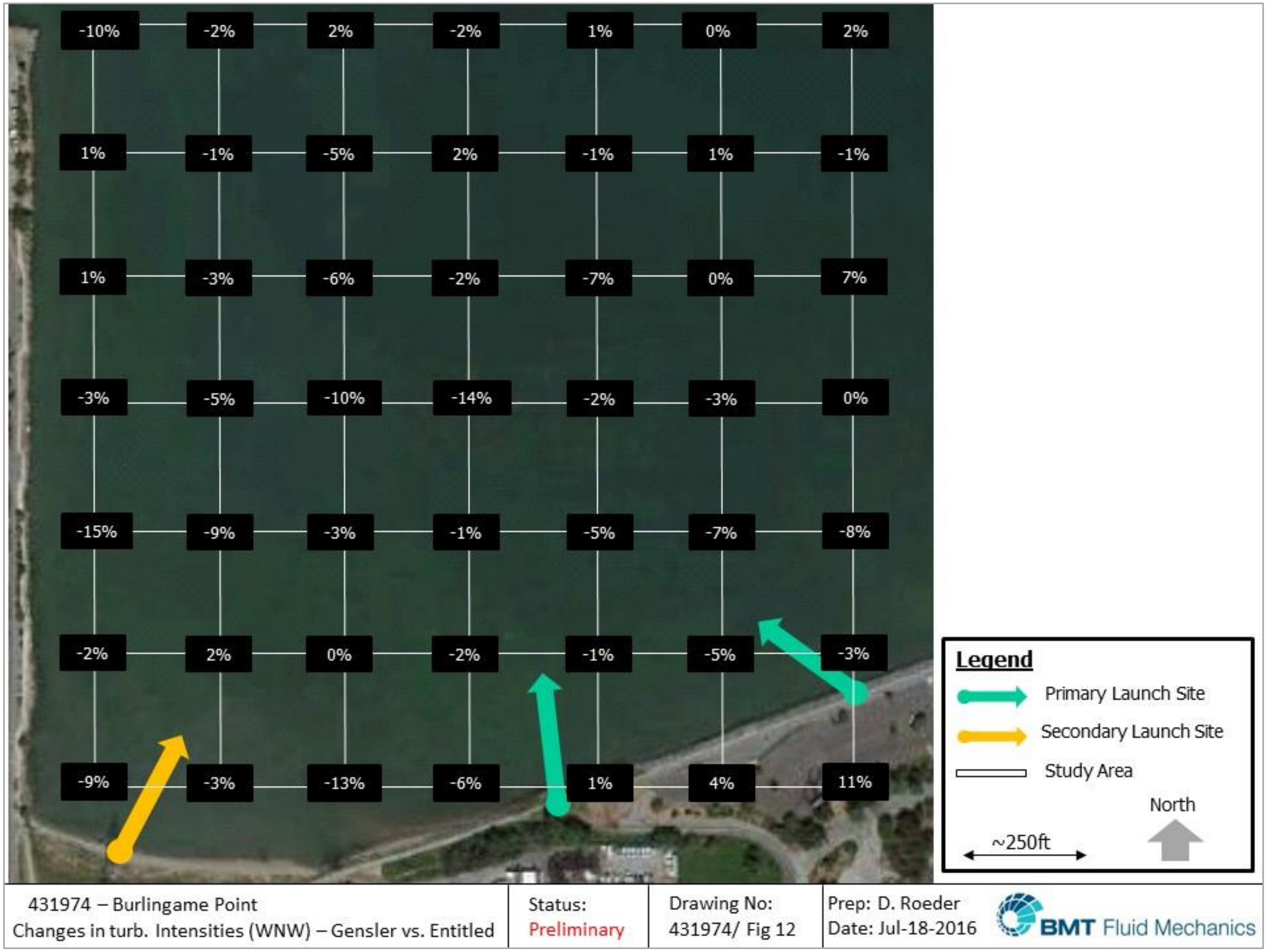
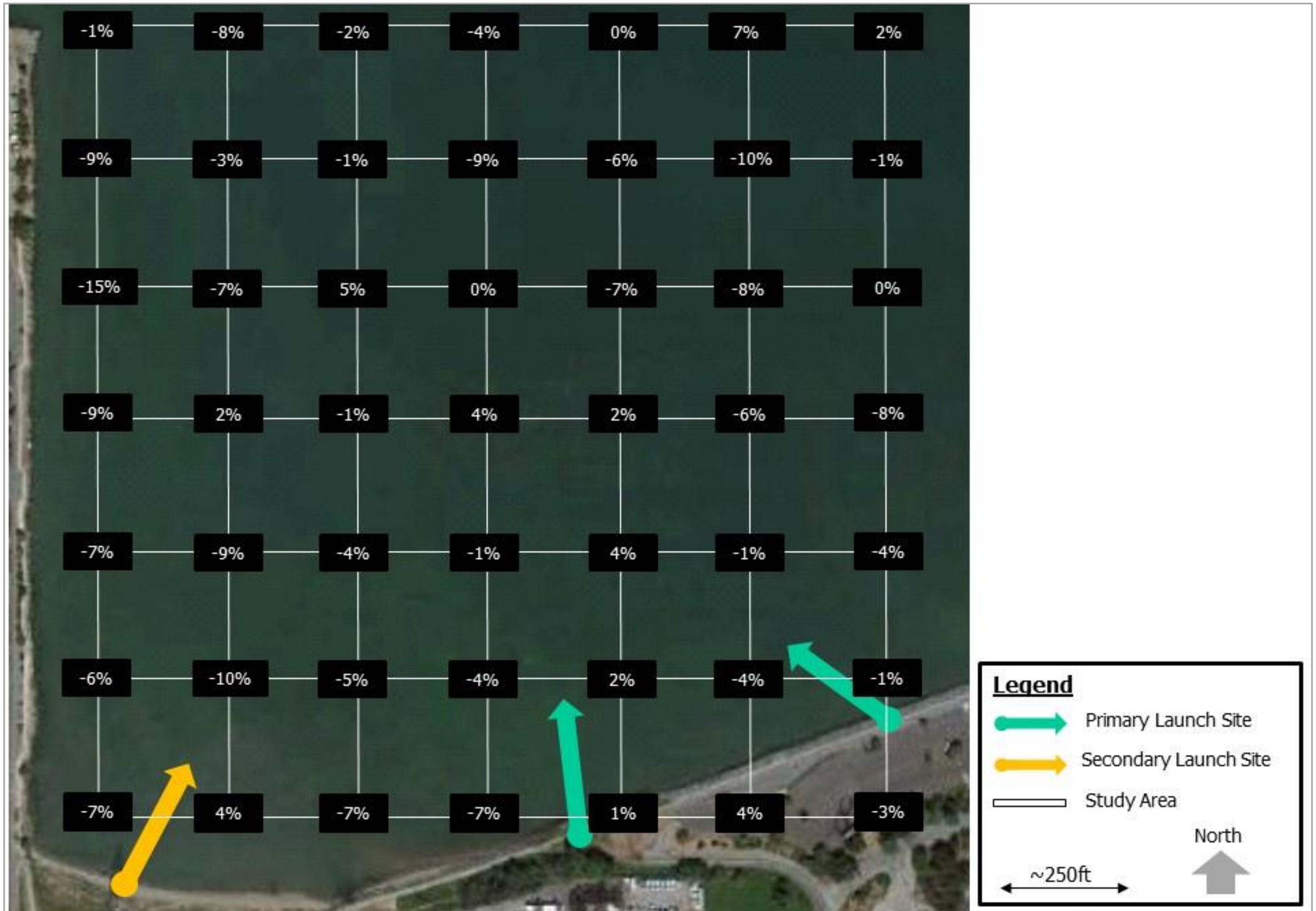


Figure 13: Changes in turbulence intensities (Northwest) – Gensler Scheme vs. Entitled Scheme



431974 – Burlingame Point Changes in turb. Intensities (NW) – Gensler vs. Entitled	Status: Preliminary	Drawing No: 431974/ Fig 13	Prep: D. Roeder Date: Jul-18-2016	BMT Fluid Mechanics