
I hereby give notice that a hearing by commissioners will be held on:

Date: Monday, 15 May 2023
Time: 9.30am
Meeting Room: Uxbridge Theatre
Venue: 35 Uxbridge Road, Howick, Auckland 2014

APPLICATION MATERIAL

SECTION 92 DOCUMENTS – VOLUME 3

**5 REEVES ROAD, PAKURANGA HEIGHTS (EB2);
207 TI RAKAU DRIVE, PAKURANGA HEIGHTS
(EB3R)**

**AUCKLAND TRANSPORT IN CONJUNCTION
WITH EASTERN BUSWAY ALLIANCE**

COMMISSIONERS

Chairperson Sarah Shaw
Commissioners Ian Munro
Nigel Mark-Brown

**Patrice Baillargeon, Senior Hearings Advisor
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Note: The reports contained within this document are for consideration and should not be construed as a decision of Council. Should commissioners require further information relating to any reports, please contact the hearings advisor.

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Appendix A

Traffic to Aimsun Zone Correspondence

Aimsun Zone	NEW CORDON Aimsun-EMME REF
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
205	205
210	210
286	286
296	296
297	297
412	412
540	540
545	545
546	546
547	547
548	548
555	555
560	560
561	561
562	562
563	563
568	568
572	572
582	582
583	583
599	599
649	649
650	650
651	651
652	652
653	653
654	654
655	655
656	656
657	657
658	658
659	659
660	660
662	662
663	663
664	664

Aimsun Zone	NEW CORDON Aimsun-EMME REF
665	665
666	666
667	667
668	668
669	669
670	670
671	671
672	672
673	673
677	677
678	678
693	693
694	694
695	695
697	697
698	698
699	699
705	705
706	706
865	865
867	867
868	868
869	869
870	870
871	871
873	873
896	896
897	897
900	900
901	901
902	902
903	903
1013	13
1017	17
1654	654
1656	656
1902	902
1903	903
2903	903

Appendix B

Road Parameters

Table B1 – Key Road Type Parameters: Main

	Maximum Speed (km/h)	User-Defined Cost	Third User-Defined Cost	Capacity per Lane (PCUs/h)
Arterial	50	1.4	1.2	1600
Arterial - 50k Reeves	50	1.6	1.4	1200
Arterial - 50k Reeves EBD	50	1.6	1.4	1200
Arterial - Divided	60	1.2	1.1	1600
Busway	60	1	1.2	1600
Collector	50	2	1.4	900
Collector - Ireland	50	2	1.4	900
Expressway	80	0.9	0.2	2100
Local - 30k	30	5	2	500
Local - 50k	50	3	1.6	500
Minor Arterial	50	1.4	1.2	1400

Table B2 - Key Road Type Parameters: Dynamic Models

Road-Type Parameters								
Dynamic Models - Section Parameters								
	Lane Changing				Side Lane			Consider Two-Lane Car Following Model
	Cooperation (%)	Aggressiveness (%)	Breaking Intensity	Imprudent Lane Changing	Cooperation Distance	Merging Distance	Merge: First veh on is first veh off	
Arterial	50	0	Regular	No	Whole Lane	Default	Yes	Yes
Arterial - 50k Reeves	50	0	Regular	No	Whole Lane	Default	Yes	Yes
Arterial - 50k Reeves EBD	50	0	Regular	No	Whole Lane	Default	Yes	Yes
Arterial - Divided	80	0	Regular	No	Whole Lane	Default	Yes	Yes
Busway	50	0	Regular	No	Whole Lane	Default	Yes	Yes
Collector	50	0	Regular	No	Whole Lane	Default	Yes	Yes
Collector - Ireland	50	0	Regular	No	Whole Lane	Default	Yes	Yes
Expressway	80	0	Regular	No	Whole Lane	Default	Yes	Yes
Local - 30k	50	0	Regular	No	Whole Lane	Default	Yes	Yes
Local - 50k	50	0	Regular	No	Whole Lane	Default	Yes	Yes
Minor Arterial	50	0	Regular	No	Whole Lane	Default	Yes	Yes
	Queue Discharge							
	Acceleration Factor	Additional Reaction Time at Stop (sec)	Additional Reaction Time at Traffic Light (sec)					
Arterial	No Change	0	0					
Arterial - 50k Reeves	No Change	0	0					
Arterial - 50k Reeves EBD	No Change	0	0					
Arterial - Divided	No Change	0	0					
Busway	No Change	0	0					
Collector	No Change	0	0					
Collector - Ireland	No Change	0	0					
Expressway	No Change	0	0					
Local - 30k	No Change	0	0					
Local - 50k	No Change	0	0					
Minor Arterial	No Change	0	0					

Table B3 - Key Road Type Parameters: Dynamic Models continued

Road-Type Parameters						
Dynamic Models - Turn Parameters						
	Microscopic Model					
	Distance Zone 1 (m)	Distance Zone 2 (m)	Additional Waiting Time Before Losing Turn (sec)	Yellow Box Speed (km/h)		
Arterial	333.3	166.67	0	10		
Arterial - 50k Reeves	333.3	166.67	0	10		
Arterial - 50k Reeves EBD	333.3	166.67	0	10		
Arterial - Divided	333.3	166.67	0	10		
Busway	333.3	166.67	0	10		
Collector	277.78	138.89	0	10		
Collector - Ireland	277.78	138.89	0	10		
Expressway	555.56	277.78	0	10		
Local - 30k	277.78	138.89	0	10		
Local - 50k	277.78	138.89	0	10		
Minor Arterial	277.78	138.89	0	10		
	Giveaway Model					
	Initial Safety Margin (sec)	Initial Giveaway Time Factor	Visibility to Give Way (m)	Final Safety Margin (sec)	Final Give Way Time Factor	Visibility along Main Stream (m)
Arterial	3	1	25	1	2	60
Arterial - 50k Reeves	3	1	25	1	2	60
Arterial - 50k Reeves EBD	3	1	25	1	2	60
Arterial - Divided	3	1	25	1	2	60
Busway	3	1	25	1	2	60
Collector	3	1	25	1	2	60
Collector - Ireland	3	1	25	1	2	60
Expressway	3	1	25	1	2	100
Local - 30k	3	1	25	1	2	60
Local - 50k	3	1	25	1	2	60
Minor Arterial	3	1	25	1	2	60

Appendix C

Vehicle Parameters

Table C1 - Key Vehicle Parameters

Vehicle Parameters				
Main				
Length (m)	Mean	Deviation	Minimum	Maximum
Car	4.5	0.4	3.3	5.3
Truck	11.3	4.3	6.5	19.1
Bus	13	1	12.6	13.5
Width (m)	Mean	Deviation	Minimum	Maximum
Car	1.75	0	1.75	1.75
Truck	2.4	0	2.4	2.4
Bus	2.4	0	2.4	2.4
Max Desired Speed (km/h)	Mean	Deviation	Minimum	Maximum
Car	110	10	80	120
Truck	100	5	80	110
Bus	90	10	70	100
Dynamic Models - Main				
Speed Acceptance	Mean	Deviation	Minimum	Maximum
Car	1.05	0.1	0.9	1.3
Truck	1.05	0.1	1	1.1
Bus	1	0.1	0.9	1.1
Clearance (m)	Mean	Deviation	Minimum	Maximum
Car	1.5	0.5	1	2.3
Truck	2	0.5	1.5	3
Bus	1.5	0.5	1	2.5
Max Give Way Time (secs)	Mean	Deviation	Minimum	Maximum
Car	10	2.5	5	15
Truck	25	5	10	35
Bus	35	10	20	60
Dynamic Models - Experiment Defaults				
	Reaction Time	Reaction Time at Stop	Reaction Time for Front Veh	Probability
Car	0.8	1.15	1.35	1
Truck	0.8	1.3	1.7	1
Bus	0.8	1.3	1.7	1

Table C1 - Key Vehicle Parameters continued

Vehicle Parameters				
Microscopic Model - Main				
Max Acceleration (m/s²)	Mean	Deviation	Minimum	Maximum
Car	2.7	0.2	2.2	3.5
Truck	1.45	0.6	0.5	2.4
Bus	1	0.3	0.8	1.8
Normal Deceleration (m/s²)	Mean	Deviation	Minimum	Maximum
Car	3.5	0.2	3	4
Truck	3	0.3	2	3.5
Bus	2	1	1.5	4.5
Max Deceleration (m/s²)	Mean	Deviation	Minimum	Maximum
Car	6	0.5	5	7
Truck	5	0.5	4	6
Bus	5	1	4	6
Sensitivity Factor	Mean	Deviation	Minimum	Maximum
Car	1.1	0	1.1	1.1
Truck	1.1	0	1.1	1.1
Bus	1	0	1	1
Gap (secs)	Mean	Deviation	Minimum	Maximum
Car	1.1	0.2	0.5	2
Truck	1.3	0.2	0.5	2.5
Bus	1.1	0.2	0.5	2.5
Headway Aggressiveness	Mean	Deviation	Minimum	Maximum
Car	0	0	-1	1
Truck	0	0	-1	1
Bus	0	0	-1	1
Favours Stop and Go				
Car	No			
Truck	No			
Bus	No			
Lane-Changing Model	Staying in Overtaking Lane	Imprudent Lane Changing		
Car	No	No		
Truck	No	No		
Bus	No	No		
Margin for Overtaking Manouver (secs)	Mean	Deviation	Minimum	Maximum
Car	5	3	1	10
Truck	5	3	1	10
Bus	5	3	1	10

Table C1 - Key Vehicle Parameters continued

Vehicle Parameters			
Static Models			
	Transportation Mode	PCUs	
Car	None	1	
Truck	None	2.5	
Bus	None	2.5	

Appendix D

Bus Services List

Base 2018 Bus Services

31

35

70

72X

72M

72C

352

351

353

711

355

739

712

735

733

734

323

743

751

Appendix E

Attribute Overrides and Applicability

Attribute Overrides and Applicability

Attribute Override Name	AM	PM	Static	Dynamic
Base 2016 Yellow Box	√	√	√	√
Base 2018 Section Speed	√	√	√	√
Base 2018 Turn Capacity	√	√	√	√
Harris Rd Lane Cooperation	√	√	√	√
Ti Rakau Lane Cooperation	√		√	√
Pakuranga Rd Look Aheads	√		√	√
Pakuranga Rd Section Speed		√	√	√

Junction and Turn Delay Calculation Parameters

Intersection Coding Adopted from ADTA

To assist with scripting and automation, a classification system was applied to turn movements to signify different conflict situations at intersections. The external ID of each turn movement was set to a 4-digit code following the convention below:

XYZZ

where **X** = intersection type

Y = number of approaches/legs

ZZ = movement type

These 4-digit codes were used in each JDF and TPF cost function scripts to allocate the correct calibration parameters to each turn at the calibration stage

X	INTERSECTION TYPE
1	Signalised
2	Roundabout
3	Priority intersection – Give-way sign at Minor Road
4	Priority intersection – Stop sign at Minor Road
5	Two-way one lane bridge
6	Zebra pedestrian crossing
Y	NUMBER OF APPROACHES
ZZ	MOVEMENT TYPE¹
00	Unopposed Turn (e.g. Through and left turn on Major Road, as well as signalised movements)
01	Left Turn – 1-lane opposing
02	Left Turn – 2-lane or more opposing
03	Through Movement Crossing One-way Road – 2-lane one-way
04	Through Movement Crossing One-way Road – 3-lane one-way
05	Through Movement Crossing One-way Road – 4-lane one-way
06	Through Movement Crossing Two-way Road – 2-lane two-way
07	Through Movement Crossing Two-way Road – 4-lane two-way
08	Through Movement Crossing Two-way Road – 6-lane two-way
09	Right Turn from Major Road - Across 1 lane
10	Right Turn from Major Road - Across 2 lanes
11	Right Turn from Major Road - Across 3 lanes
12	Right Turn from Minor Road – One-way
13	Right Turn from Minor Road – 2-lane two-way Major Road / Across 1 lane
14	Right Turn from Minor Road – 4-lane two-way Major Road / Across 2 lanes
15	Right Turn from Minor Road – 6-lane two-way Major Road / Across 3 lanes
16	Staged Right Turn from Minor Road – Across 1 lane with flush median or merge lane in the middle
17	Staged Right Turn from Minor Road – Across 2 lanes with flush median or merge lane in the middle
18	Staged Right Turn from Minor Road – Across 3 lanes with flush median or merge lane in the middle

ADTA-Calibrated Intercept and Slope Values for turn types used in JDF

Turn External Id	Number of Approach lanes for this Movement	Intercept	Slope
1x01	x	735	0.37
1x02	x	925	0.35
1x03	x	400	0.18
1x04	x	330	0.15
1x06	x	300	0.08
1x07	x	225	0.05
1x09	x	595	0.29
1x10	x	595	0.25
1x11	x	630	0.27
1x13	x	300	0.08
1x14	x	225	0.05
1x15	x	225	0.05
2xxx	1	1,200	0.7
2xxx	2	2,500	0.8
2xxx	3	3,100	0.8
3x01	x	735	0.37
3x02	x	925	0.35
3x03	x	400	0.18
3x04	x	330	0.15
3x05	x	330	0.15
3x06	x	300	0.08
3x07	x	225	0.05
3x08	x	225	0.05
3x09	x	595	0.29
3x10	x	595	0.25
3x11	x	630	0.27
3x12	x	400	0.18
3x13	x	300	0.08
3x14	x	225	0.05
3x15	x	225	0.05
3x16	x	400	0.18
3x17	x	330	0.15
3x18	x	330	0.15
4x01	x	510	0.21
4x02	x	505	0.09
4x03	x	355	0.15
4x04	x	310	0.14
4x05	x	310	0.14
4x06	x	230	0.05
4x07	x	230	0.05
4x08	x	230	0.05
4x09	x	595	0.29
4x10	x	595	0.25
4x11	x	630	0.27
4312	x	355	0.15
4313	x	230	0.05
4314	x	230	0.05
4315	x	230	0.05
4316	x	355	0.15
4317	x	310	0.14
4318	x	310	0.14
4412	x	355	0.15
4413	x	235	0.16
4414	x	235	0.16
4415	x	230	0.05
4416	x	355	0.15
4417	x	310	0.14
4418	x	310	0.14
5x03	x	500	0.2

Appendix G

Cost Function Scripts

Volume Delay Function

```
model = None
tollCarColumn = None
tollTruckColumn = None
assignedVolColumn = None
laneCapacityColumn = None

def checkExperimentContext(context, turning):
    global model
    global tollCarColumn
    global tollTruckColumn
    global assignedVolColumn
    global laneCapacityColumn
    if model == None:
        model = context.experiment.getModel()

    # get the section type
    sectionType = model.getType('GKSection')
    if tollCarColumn == None:
        tollCarColumn = sectionType.getColumnByExternalName ("TOLL - CAR", 0)
    if tollTruckColumn == None:
        tollTruckColumn = sectionType.getColumnByExternalName ("TOLL - TRUCK", 0)

    # get the road type
    roadType = model.getType('GKRoadType')
    if laneCapacityColumn == None:
        laneCapacityColumn = roadType.getColumnByExternalName('Lane Capacity',0)

    turnType = model.getType('GKTurning')
    if assignedVolColumn == None:
        assignedVolColumn = turnType.getColumn('MACRO:' + str(context.experiment.getId()) + '_GKTurning_macroAssignedVolume_0', 0)

def travelTime(context, section, funcVolume):

    global model

    #define the peak hour factor based on peak
    # get the experiment
    experiment = context.experiment
    # get the scenario
    scenario = experiment.getScenario()
    # get the traffic demand
    trafficDemand = scenario.getDemand()
    # get the start time of the demand
    startTime = trafficDemand.initialTime()
    # get the duration of the demand
    assignmentDuration = trafficDemand.duration().hour()

    #set parameters from sections
    speed = section.getSpeed()
    volume = funcVolume.getVolume()
    length = section.length3D()
    capacity = section.getCapacity()
    capacityperlane = section.getRoadType().getDataValueDouble(laneCapacityColumn)
    JA = section.getUserDefinedCost3()

    # assign volume peak hour factor based on peak
    phfVol = 1.0

    # fixed, global factor
    if startTime.hour() == 6:
        phfVol = 1.15
    elif startTime.hour() == 11:
        phfVol = 1.02
    elif startTime.hour() == 15:
        phfVol = 1.05

    # assign speed peak hour factor based on peak
    phfSpeed = 1.0
    """
    # fixed, global factor
    if startTime.hour() == 6:
        phfSpeed = 1.1595
    elif startTime.hour() == 11:
        phfSpeed = 1.0707
    elif startTime.hour() == 15:
        phfSpeed = 1.1422
    """

    #calculate additional parameters
    #apply peak volume factor when calculating degree of saturation
    X = (volume * phfVol) / capacity
    T0 = 1000 / (speed / 3.6) # minimum travel time for section

    #calculate dealy based of the Akcelik delay function

    Tf = 1.0 # Analysis Flow Period, taken as 1 hour
    Rf = (Tf*3600) / T0 # unitless ratio
    #JA = 0.2
    eightX = (8.0 * JA * X ) / (capacityperlane * Tf)

    Time = T0 * ( 1 + 0.25*Rf*((X-1.0)+(X-1.0)**2 + eightX)**0.5) #give seconds per Km

    # peak hour travel time in seconds
    peakHourTravelTime = (Time * (length / 1000))
```

```

# peak hour speed in m/s
peakHourSpeed = length / peakHourTravelTime
# three hour average speed in m/s
threeHourAveSpeed = peakHourSpeed * phfSpeed
# cap the speed at the section maximum speed
if threeHourAveSpeed > (speed / 3.6):
    threeHourAveSpeed = (speed / 3.6)
# four hour average travel time in seconds
threeHourAveTravelTime = length / threeHourAveSpeed

return (threeHourAveTravelTime /60)

def distCost(context, section, funcVolume):
'''
The distance factor adopted from Wellington N2A model
P:\429\4291565\Technical\300 Technical\320 Models\321 Network Build\N2A_GeneralisedCostDistanceFactor.xlsx

Assumptions
Fuel cost                1.75    $/litre
fuel consumption         9.5     l/100km
fuel rate                0.16625 $/km
Assume gc is just fuel cost

Assumed acg Value of time    16.27    $/hr, 2002 (EEM urban arterial)
Update factor to 2015       1.44     EEM
VoT 2015                   23.43    $/hr
Update factor 2016 estimated 1.01
VoT 2016 est               23.66    $/hr, 2002 (EEM urban arterial)
Value of time              2.536    min/$
gc of fuel                 0.422    mins per km

Assume 0.4 for Car

Truck factor was agreed to be 1.0
'''

# get the length of the section
length = section.length3D()/1000 # length in km

# factor for the distance component (unit: mins/km)
className = str(context.userClass.getName())
if className[0:3] == "Car":
    distFactor = 0.5
else:
    distFactor = 1.0

# get the user defined cost of the section
roadTypeFactor = section.getUserDefinedCost()

# calculate the distance cost
distanceCost = distFactor * roadTypeFactor * length

return distanceCost

# this function calculates the speed in km/hr of the section
def calculateSpeed(context, section, funcVolume):
# convert travel time to seconds
tTime = travelTime(context, section, funcVolume) * 60.0
# get the section length in metres
length = section.length3D()
# calculate and return the speed in km/hr
return (length / tTime)*3.6

# this function calculates the truck percentage
def calculateTruckPercentage(context, section, funcVolume):
# get the car volume
carVolume = (funcVolume.getVolume(model.getCatalog().findByName('Car - ALL', model.getType('GKVehicle')))) +
funcVolume.getVolume(model.getCatalog().findByName('Car - L - LOV',
model.getType('GKVehicle')))) +
funcVolume.getVolume(model.getCatalog().findByName('Car - L - HOV',
model.getType('GKVehicle')))) +
funcVolume.getVolume(model.getCatalog().findByName('Car - M - LOV',
model.getType('GKVehicle')))) +
funcVolume.getVolume(model.getCatalog().findByName('Car - M - HOV',
model.getType('GKVehicle')))) +
funcVolume.getVolume(model.getCatalog().findByName('Car - H - LOV',
model.getType('GKVehicle')))) +
funcVolume.getVolume(model.getCatalog().findByName('Car - H - HOV',
model.getType('GKVehicle'))))
# get the truck volume
truckVolume = funcVolume.getVolume(model.getCatalog().findByName('Truck', model.getType('GKVehicle')))

# error handling for zero volume
if (carVolume + truckVolume) > 0:
    truckPercentage = (truckVolume / (carVolume + truckVolume)) * 100
else:
    truckPercentage = 0
# return the truck percentage
return truckPercentage

def vdf(context, section, funcVolume):

# assign the global variables
checkExperimentContext(context, section)

# calculate average section speed in km/hr
speed = calculateSpeed(context, section, funcVolume)

```

```

# calculate the truck percentage on this section
truckPercentage = calculateTruckPercentage(context, section, funcVolume)

# calculate total cost
totalCost = travelTime(context, section, funcVolume) + distCost(context, section, funcVolume)

return totalCost

```

Volume Delay Function (Connector)

```

def travelTimeConnector(context, connection, funcVolume):

    # work out the time period
    experiment = context.experiment
    scenario = experiment.getScenario()
    trafficDemand = scenario.getDemand()
    duration = trafficDemand.duration()
    durationInHours = duration.toHours()

    #set parameters
    speed = 30.0
    capacity = 200.0 * durationInHours # set to 200 veh/hr, capacity need to be total over three hours
    capacityperlane = 200.0
    JA = 10.0

    volume = funcVolume.getVolume()
    length = connection.length3D()
    totalVolume = volume

    #calculate additional parameters
    X = totalVolume / capacity
    T0 = 1000 / (speed / 3.6) # minimum travel time for section

    #calculate dealy based of the Akcelik delay function

    Tf = 1.0 # Analysis Flow Period, taken as 1 hour
    Rf = (Tf*3600) / T0 # unitless ratio
    #JA = 0.2
    eightX = (8.0 * JA * X) / (capacityperlane * Tf)

    Time = T0 * ( 1 + 0.25*Rf*((X-1.0)+((X-1.0)**2 + eightX)**0.5)) #give seconds per Km

    TotalTravelTime = (Time * (length / 1000))/60

    return TotalTravelTime

def distCostConnector(context, connection, funcVolume):

    """
    The distance factor adopted from Wellington N2A model
    P:\429\4291565\Technical\300 Technical\320 Models\321 Network Build\N2A_GeneralisedCostDistanceFactor.xlsx

    Assumptions
    Fuel cost                                1.75      $/litre
    fuel consumption                          9.5        l/100km
    fuel rate                                 0.16625    $/km
    Assume gc is just fuel cost

    Assumed acg Value of time                 16.27      $/hr, 2002 (EEM urban arterial)
    Update factor to 2015                     1.44       EEM
    VoT 2015                                  23.43      $/hr
    Update factor 2016 estimated 1.01
    VoT 2016 est                              23.66      $/hr, 2002 (EEM urban arterial)
    Value of time                             2.536      min/$
    gc of fuel                                 0.422      mins per km

    Assume 0.4 for Car

    Truck factor was agreed to be 1.0
    """

    # get the length of the section
    length = connection.length3D()/1000 # length in km

    # factor for the distance component (unit: mins/km)
    className = str(context.userClass.getName())
    dashIndex = className.find("-")
    vehName = className[dashIndex:]
    if vehName == "Car" :
        distFactor = 0.5
    elif vehName == "Truck":
        distFactor = 1.0
    else:
        distFactor = 0.0

    # calculate the distance cost
    distanceCost = distFactor * length

    return distanceCost

def vdf(context, connection, funcVolume):

```

```

# calculate total cost
totalCost = travelTimeConnector(context, connection, funcVolume) + distCostConnector(context, connection, funcVolume)

return totalCost

```

Junction Delay Function

```

def travelTime( context, turn, volume, ownVolume, conflictVolume ):
    model = context.experiment.getModel()
    # work out the time period
    experiment = context.experiment
    scenario = experiment.getScenario()
    trafficDemand = scenario.getDemand()
    duration = trafficDemand.duration()
    durationInHours = duration.toHours()

    #define the peak hour factor based on peak
    # get the experiment
    experiment = context.experiment
    # get the scenario
    scenario = experiment.getScenario()
    # get the traffic demand
    trafficDemand = scenario.getDemand()
    # get the start time of the demand
    startTime = trafficDemand.initialTime()
    # assign peak hour factor based on peak
    # use 1.0 to start adjust as required during calibration - base on observed data
    phfVol = 1.0

    if startTime.hour() == 6:
        phfVol = 1.15
    elif startTime.hour() == 11:
        phfVol = 1.02
    elif startTime.hour() == 15:
        phfVol = 1.05

    # assign travel time factor to reduce peak hour travel time to three hour average travel time
    phfTT = 1.0
    """
    if startTime.hour() == 6:
        phfTT = 0.6946
    elif startTime.hour() == 11:
        phfTT = 0.8726
    elif startTime.hour() == 15:
        phfTT = 0.7902
    """

    turnType = model.getType('GKTurning')
    userSlopeColumn = turnType.getColumnByExternalName("Turn Capacity Slope", 0)

    #set give-way linear parameters and calculate give-way turn capacity
    Slope = turn.getDataValueDouble(userSlopeColumn)
    Intercept = turn.getCapacity ()
    OpposingFlow = (conflictVolume.getVolume() * phfVol) / durationInHours # AIMSUN return total volume over the time period

    overrides = experiment.getNetworkAttributesOverrides()
    targetId = turn.getId()
    for override in overrides:
        objects = override.getObjects()
        for object in objects:
            if object.getId() == targetId:
                for column, value in override.getObjectData(object).iteritems():
                    if column.getName() == 'GKTurning::capacityAtt':
                        Intercept = int(value)

    Capacity = (Intercept - Slope * OpposingFlow) # per hour

```

```

#calculate dealy based of the Akcelik dealy function
turnFlow = volume.getVolume()
if Capacity < 50:
    if Intercept < 50:
        Capacity = Intercept
    else:
        Capacity = 50

X = (turnFlow * phfVol) / (Capacity * durationInHours)
TurnLength = turn.length3D()
TurnSpeed = turn.getSpeed()
T0 = 1
Tf = 1.0
Rf = (Tf*3600) / T0
JA = 1.0 # Curve Parameter
eightX = 8.0 * JA * X / (Capacity * Tf)

Time = (T0 * ( 1 + 0.25*Rf*((X-1.0)+((X-1.0)**2 + eightX)**0.5)))/60

return Time * phfTT

def jdf( context, turn, volume, ownVolume, conflictVolume ):

    TT = travelTime( context, turn, volume, ownVolume, conflictVolume )

    #debugging
    #print 'JDF of turn %i with volume of %f and opposing volume of %f calculated the travel time at %f % (turn.getId(), volume.getVolume(),
conflictVolume.getVolume(), TT)

    return TT

```

Turn Delay Function

```

'''
Updated 04/05/2017
From built-in Aimsun 8.2 TPF - Example for Signalized Intersection

Updated 01/08/2017
Refined turn saturation flow to be a function of turn speed
'''

experimentId = None
analysisPeriod = 0.0 # [h]
phfVol = 1.0
phfTT = 1.0

def initialiseContext(context):
    global experimentId
    global analysisPeriod
    global phfVol
    global phfTT
    if context.experiment.getId() != experimentId:
        experimentId = context.experiment.getId()
        analysisPeriod = context.experiment.getScenario().getDemand().duration().toHours()
    #define the peak hour factor based on peak
    # get the experiment
    experiment = context.experiment
    # get the scenario
    scenario = experiment.getScenario()
    # get the traffic demand
    trafficDemand = scenario.getDemand()
    # get the start time of the demand
    startTime = trafficDemand.initialTime()
    # assign peak hour factor based on peak
    phfVol = 1

    if startTime.hour() == 6:
        phfVol = 1.15
    elif startTime.hour() == 10:

```

```

        phfVol = 1.02
    elif startTime.hour() == 15:
        phfVol = 1.05

    # assign travel time factor to reduce peak hour travel time to four hour average travel time
    phfTT = 1
    """
    if startTime.hour() == 6:
        phfTT = 0.6946
    elif startTime.hour() == 10:
        phfTT = 0.8726
    elif startTime.hour() == 15:
        phfTT = 0.7902
    """

# free flow travel time [min]
def freeFlowTravelTime(turn):
    return turn.length3D()/1000.0 * 60.0/turn.getSpeed()

# actual green duration for actuated phases [s]
# calculated considering the demand and the queue discharge rate
def actualGreen(turn, volume):
    dischargeRate = 0.5 # [veh/s]
    requiredGreen = volume / dischargeRate # [s]
    numberOfCycles = 3600.0 * analysisPeriod / turn.getCycle()
    return min(max(requiredGreen / numberOfCycles, turn.getMinGreenTime()), turn.getMaxGreenTime())

# HCM2010 progression adjustment factor
def progressionAdjustmentFactor(green, cycle):
    g_over_c = green / cycle
    P = min(1.33 * g_over_c, 1.0)
    top_part = (1.0 - P)
    bottom_part = 1.0 - g_over_c
    return top_part / bottom_part

# HCM2010 uniform control delay (quick estimation method) [s]
def uniformControlDelay(volume, capacity, green, cycle):
    g_over_c = green / cycle
    X = (volume * phfVol) / (capacity * analysisPeriod)
    top_part = 0.5 * cycle * (1.0 - g_over_c)**2
    bottom_part = 1.0 - (min(1.0, X) * g_over_c)
    return top_part / bottom_part

# HCM2010 incremental delay (quick estimation method) [s]
def incrementalDelay(volume, capacity):
    X = (volume * phfVol) / (capacity * analysisPeriod)
    return 900.0 * analysisPeriod * ((X - 1.0) + ((X - 1.0)**2 + (4.0 * X / (capacity * analysisPeriod)))**0.5)

# HCM2010 control delay (quick estimation method) [min]
def controlDelay(volume, capacity, green, cycle):
    pf = progressionAdjustmentFactor(green, cycle)
    d_one = uniformControlDelay(volume, capacity, green, cycle)
    d_two = incrementalDelay(volume, capacity)
    res = (pf * d_one) + d_two
    return res / 60.0 * phfTT

def calculateCapacity(turn):
    # get the speed of the turn
    speed = turn.getSpeed()
    # if the speed is less than 50 km/hr
    if speed < 50:
        # calculate saturation flow based on speed
        s = -0.513*speed**2 + 54.81*speed + 553.46
    # else
    else:
        # saturation flow (PCUs/hr)
        s = 2000.0
    # get the turn object as coded (GKTurn)
    turnObject = turn.getMaster()

```

```

# get the index of the left most lane for this turn
leftMostLanes = turnObject.getOriginFromLane()
# get the index of the right most lane for this turn
rightMostLanes = turnObject.getOriginToLane()
# calculate number of lanes
lanes = rightMostLanes - leftMostLanes + 1
# the capacity is saturation flow * lanes * green / cycle
capacity = s * lanes * (turn.getGreenTime() / turn.getCycle())

return capacity

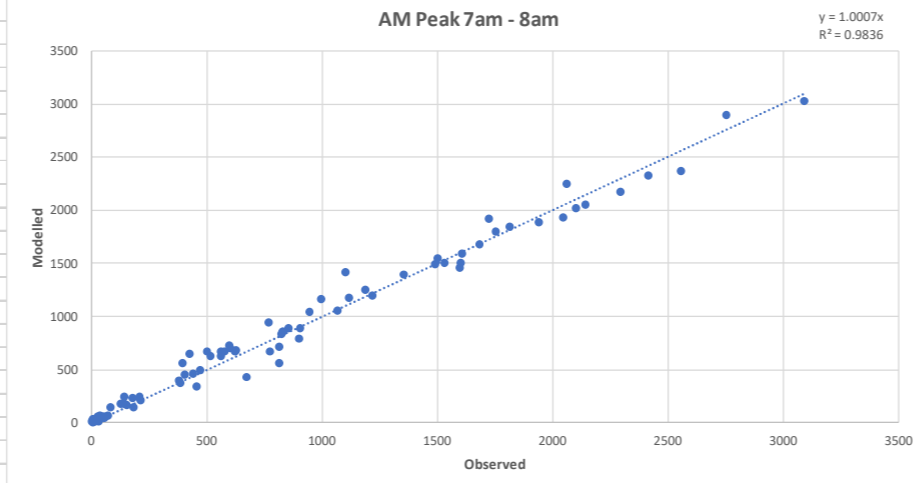
def tpf(context, turn, volume):
    initialiseContext(context)
    res = freeFlowTravelTime(turn)
    if turn.getCycle() > 0.0:
        green = turn.getGreenTime()
        if turn.getControlJunctionType() == 4: # actuated
            green = actualGreen(turn, volume.getVolume())
        # error handling for 0 green time in control plan for this turn
        if green > 0:
            if green < turn.getCycle():
                res += controlDelay(volume.getVolume(), calculateCapacity(turn), green, turn.getCycle())
        else:
            print 'turn %u in node %u has no green time in the control plan used' % (turn.getMaster().getld(), turn.getMaster().getNode().getld())
    return res

```


Appendix H

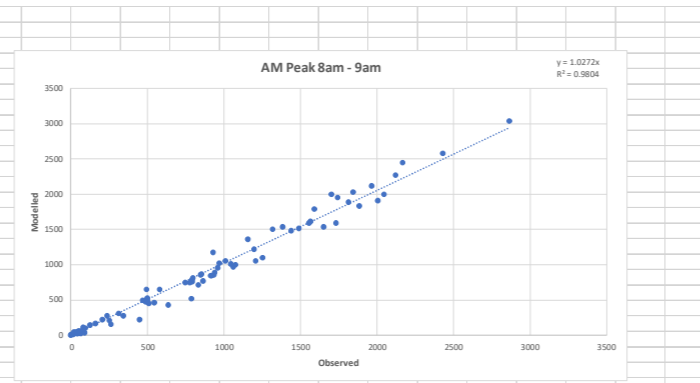
Count Validation Tables

Object	Count	Li	Count	Absolute	Relative C	GEH	10.0166	Diff^2	Obs/N
11897	670	434.6	-235.4	-35.1343	10.0166			55413.16	8.170732
7732	816	557	-259	-31.7402	9.88506			67081	9.95122
16548	424	652.8	228.8	53.9623	9.8606			52349.44	5.170732
12210502	1100	1413	313	28.4545	8.83005			97969	13.41463
16517	393	559.8	166.8	42.4427	7.64206			27822.24	4.792683
7276	144	247.2	103.2	71.6667	7.37896			10650.24	1.756098
7400	500	667.2	167.2	33.44	6.92116			27955.84	6.097561
12210282	770	946.8	176.8	22.961	6.03445			31258.24	9.390244
7104	81	143.6	62.6	77.284	5.90724			3918.76	0.987805
7228	8	34	26	325	5.67367			676	0.097561
7166	457	347.8	-109.2	-23.895	5.44369			11924.64	5.573171
12210663	994	1160.6	166.6	16.7606	5.07583			27755.56	12.12195
15953	599	721.6	122.6	20.4674	4.77111			15030.76	7.304878
7074	1721	1923.8	202.8	11.7838	4.75057			41127.84	20.9878
7092	25	54	29	116	4.61423			841	0.304878
12870	518	626	108	20.8494	4.51571			11664	6.317073
12211719	563	668.8	105.8	18.7922	4.26315			11193.64	6.865854
7438	38	69	31	81.5789	4.23823			961	0.463415
12210270	2	13.8	11.8	590	4.19825			139.24	0.02439
7210	177	234.8	57.8	32.6554	4.02809			3340.84	2.158537
7042	2064	2249.4	185.4	8.98256	3.99222			34373.16	25.17073
7274	2557	2365.2	-191.8	-7.50098	3.8662			36787.24	31.18293
7410	127	174.2	47.2	37.1654	3.84618			2227.84	1.54878
7222	603	701.2	98.2	16.2852	3.84551			9643.24	7.353659
12211551	772	672.4	-99.6	-12.9016	3.70621			9920.16	9.414634
12211562	579	670.2	91.2	15.7513	3.64917			8317.44	7.060976
7524	901	797.2	-103.8	-11.5205	3.5622			10774.44	10.9878
7192	816	719.2	-96.8	-11.8627	3.49388			9370.24	9.95122
17220	30	52.2	22.2	74	3.46284			492.84	0.365854
12211622	1597	1465.4	-131.6	-8.24045	3.3631			17318.56	19.47561
7730	184	143.2	-40.8	-22.1739	3.18984			1664.64	2.243902
7724	947	1045.8	98.8	10.4329	3.12997			9761.44	11.54878
7140	142	180.2	38.2	26.9014	3.00965			1459.24	1.731707
13643	2753	2901.8	148.8	5.40501	2.7984			22141.44	33.57317
15596	563	628.8	65.8	11.6874	2.6955			4329.64	6.865854
7220	2295	2174	-121	-5.27233	2.55974			14641	27.9878
7126	30	17.6	-12.4	-41.3333	2.54175			153.76	0.365854
7390	1601	1501	-100	-6.2461	2.53918			10000	19.52439
15955	2048	1936.4	-111.6	-5.44922	2.50033			12454.56	24.97561
12211544	406	454.2	48.2	11.8719	2.32414			2323.24	4.95122
7540	208	238.6	30.6	14.7115	2.04775			936.36	2.536585
7442	210	240.2	30.2	14.381	2.01289			912.04	2.560976
7356	629	679.4	50.4	8.01272	1.97049			2540.16	7.670732
7428	1187	1254.8	67.8	5.71188	1.94039			4596.84	14.47561
7180	1115	1178.6	63.6	5.70404	1.87808			4044.96	13.59756
7240	2141	2055	-86	-4.01681	1.87757			7396	26.10976
6920	621	667	46	7.40741	1.81265			2116	7.573171
7532	2104	2023	-81	-3.84981	1.78313			6561	25.65854
16027	2417	2331.8	-85.2	-3.52503	1.74849			7259.04	29.47561
12211629	4	1.2	-2.8	-70	1.73649			7.84	0.04878
7066	56	46.2	-9.8	-17.5	1.37093			96.04	0.682927
7118	1941	1883	-58	-2.98815	1.32643			3364	23.67073
12210676	18	12.8	-5.2	-28.8889	1.32508			27.04	0.219512
12210661	855	894	39	4.5614	1.31882			1521	10.42683
12211631	23	29.4	6.4	27.8261	1.25034			40.96	0.280488
7036	47	55.8	8.8	18.7234	1.22744			77.44	0.573171
6964	3093	3026.2	-66.8	-2.15972	1.20766			4462.24	37.71951
12152	1501	1547.8	46.8	3.11792	1.19866			2190.24	18.30488
6962	831	862.2	31.2	3.75451	1.0723			973.44	10.13415
6940	468	491.4	23.4	5	1.06839			547.56	5.707317
12210262	1357	1396.6	39.6	2.9182	1.06723			1568.16	16.54878
12210650	440	461	21	4.77273	0.9894			441	5.365854
7164	152	164.4	12.4	8.15789	0.985867			153.76	1.853659
12210320	1756	1795.8	39.8	2.26651	0.944439			1584.04	21.41463
7106	831	856	25	3.00842	0.86079			625	10.13415
7116	1814	1845.8	31.8	1.75303	0.743384			1011.24	22.12195
12210514	379	392.8	13.8	3.64116	0.702493			190.44	4.621951
7040	57	62.2	5.2	9.12281	0.673566			27.04	0.695122
12126	1530	1504	-26	-1.69935	0.667545			676	18.65854
17011	72	67.2	-4.8	-6.66667	0.575356			23.04	0.878049
16525	1220	1200.2	-19.8	-1.62295	0.569186			392.04	14.87805
12210516	383	372.8	-10.2	-2.66319	0.524701			104.04	4.670732
10618	1608	1588.4	-19.6	-1.21891	0.490276			384.16	19.60976
16119	903	889.4	-13.6	-1.50609	0.454293			184.96	11.0122
7408	1065	1052.2	-12.8	-1.20188	0.393409			163.84	12.9878
7214	38	36.2	-1.8	-4.73684	0.295519			3.24	0.463415
7254	212	208	-4	-1.88679	0.276026			16	2.585366
12211564	24	22.8	-1.2	-5	0.248069			1.44	0.292683
12155	1683	1678.2	-4.8	-0.28521	0.117087			23.04	20.52439
7172	1489	1490	1	0.067159	0.025911			1	18.15854
7098	28	28	0	0	0			0	0.341463
12211534	25	25	0	0	0			0	0.304878
Mean	823.78	841.234	17.4537	2.11873					

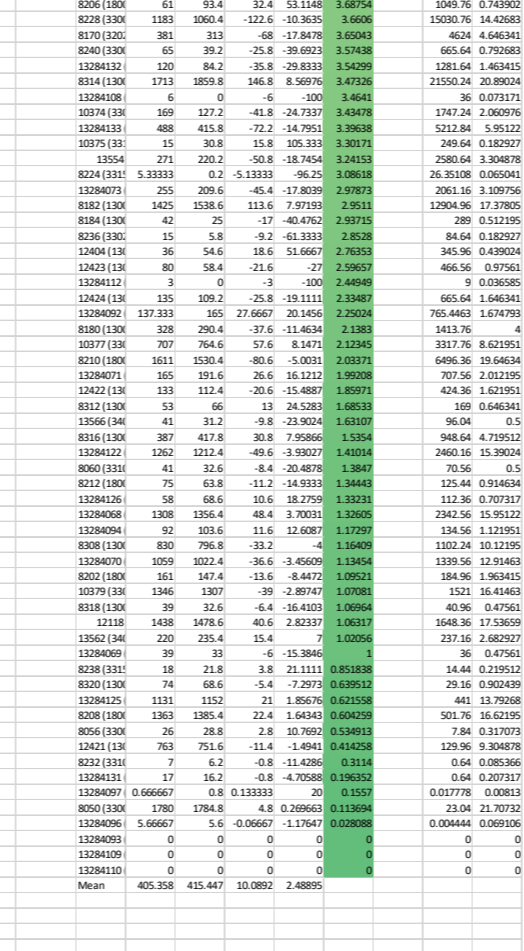


Object	Count	Li	Count	Absolute	Relative C	GEH	Diff^2	Obs/N	
13284072	2	93.6	91.6	4580	13.249			8390.56	0.02439
8062 (3315)	81	236.4	155.4	191.852	12.3357			24149.16	0.987805
13284134	6	72.4	66.4	1106.67	10.6054			4408.96	0.073171
13284124	9	68.8	59.8	664.444	9.58796			3576.04	0.109756
8218 (3310)	0	38.6	38.6	inf	8.78635			1489.96	0
8308 (1300)	462	651.8	189.8	41.0823	8.04281			36024.04	5.634146
13284092	91.6667	164.8	73.1333	79.7818	6.45825			5348.48	1.117887
8176 (1300)	1340	1504.2	164.2	10.1764	6.39184			60123.04	16.45122
74	74				6.15486			9447.84	3.634146
596803	67				5.96803			2621.44	0.585366
31	31				5.4066			16027.56	5.914634
56	56				5.30801			4147.36	1.402439
85	85				5.20633			2304	0.743902
99	99				4.89065			6988.96	4.073171
03	03				4.75553			22022.56	12.78049
11	11				4.7224			432.64	0.109756
82	82				4.6766			1797.76	0.743902
36	36				4.61863			38966.76	21.07317
02	02				4.5091			24211.36	13.57317
05	05				4.35465			1024	0.463415
53	53				4.2883			1971.36	1.036585
8060 (3310)	11	30.4	19.4	176.364	4.26399			376.36	0.134146
8200 (3200)	47	22.2	-24.8	-52.766	4.21613			615.04	0.573171
12426 (1300)	38	16.8	-21.2	-55.7895	4.05005			449.44	0.463415
13284070	947	827.8	-119.2	-12.5871	4.00144			14208.64	11.54878
13284113	8	0	-8	-100	4			64	0.097561
8170 (3200)	320	252.4	-67.6	-21.125	3.99587			4569.76	3.902439
13284126	97	62.8	-34.2	-35.2577	3.82607			1169.64	1.182927
13284095	6.33333	20	13.6667	215.789	3.76638			186.7787	0.077236
8320 (1300)	31	55.6	24.6	79.3548	3.73845			605.16	0.378049
8312 (1300)	43	69.8	26.8	62.3256	3.56858			718.24	0.52439
13284135	682	595	-87	-12.7566	3.44301			7569	8.317073
13284125	1069	968.2	-100.8	-9.42937	3.15834			10160.64	13.03659
8318 (1300)	23	11.6	-11.4	-49.5652	2.74083			129.96	0.280488
13562 (3400)	228	188.6	-39.4	-17.2807	2.72993			1552.36	2.780488
13284123	76	55	-21	-27.6316	2.59477			441	0.926829
13284068	1272	1364	92	7.2327	2.53414			8464	15.5122
8182 (1300)	1539	1639.6	100.6	6.53671	2.52345			10120.36	18.76829
8050 (3300)	1866	1975.8	109.8	5.88424	2.50524			12056.04	22.7561
8228 (3300)	1070	991.4	-78.6	-7.34579	2.44825			6177.96	13.04878
13564 (3400)	599	660.2	61.2	10.217	2.43904			3745.44	7.304878
8238 (3315)	15	25.6	10.6	70.6667	2.35265			112.36	0.182927
13284112	2	0	-2	-100	2			4	0.02439
13284130	245	274.6	29.6	12.0816</					

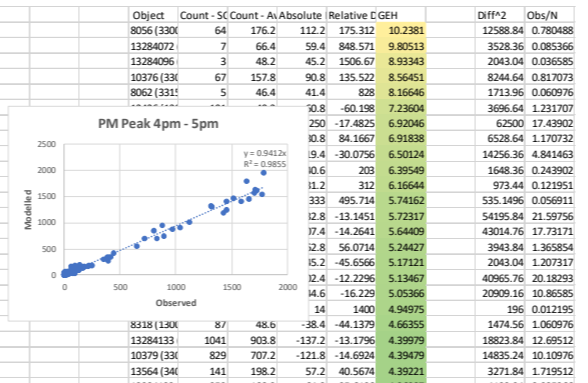
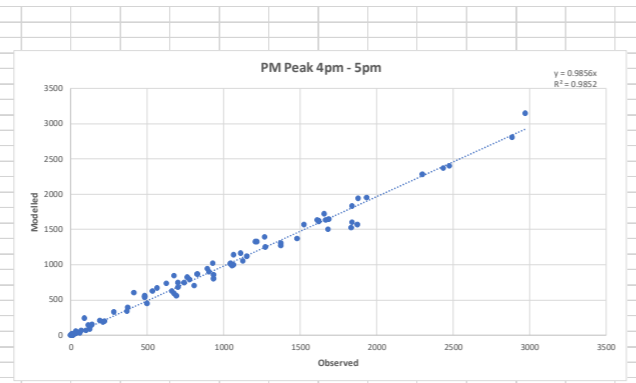
Object	Count - Li	Count - Ai	Absolute	Relative	Diff#2	Obs/N
7540	449	221.6	-227.4	-50.6459	12.4186	51710.76
7732	791	513.2	-277.8	-35.1201	10.8787	77172.84
11897	638	432.2	-205.8	-32.2571	8.89668	42353.64
12210663	928	1174.8	246.8	26.5948	7.611344	69910.24
7098	68	19.8	-48.2	-70.8824	7.27469	2323.24
7730	264	160.6	-103.4	-39.1667	7.09652	10691.56
7240	1703	1994	291	17.0875	6.76836	84681
7066	91	39	-52	-57.1429	6.44981	2704
16548	497	649	152	30.5835	6.34989	23104
12210502	1157	1364.2	207.2	17.9084	5.83581	42931.84
7274	2168	2446.4	278.4	12.8413	5.79598	77506.56
12210262	1319	1507.6	188.6	14.2987	5.01677	35569.96
12210320	1743	1954.6	211.6	12.14	4.9212	44774.56
7074	1592	1786.4	194.4	12.2111	4.72994	37791.36
7228	22	50	28	127.273	4.66667	784
12210661	1209	1057.4	-151.6	-12.5393	4.50346	22982.56
16525	1253	1104.6	-148.4	-11.8436	4.32229	22022.56
7042	1844	2032.2	188.2	10.2061	4.27495	35419.24
12211551	836	717.6	-118.4	-14.1627	4.24812	14018.56
7390	1387	1535.2	148.2	10.6849	3.87711	21963.24
7126	48	25	-23	-47.9167	3.80699	529
17220	41	20	-21	-51.2195	3.8025	441
12210270	4	15.8	11.8	295	3.75029	139.24
7254	346	280.2	-65.8	-19.0173	3.71864	4329.64
7036	59	34	-25	-42.3729	3.66618	625
7104	81	117.2	36.2	44.6914	3.6364	1310.44
12210514	546	465.8	-80.2	-14.6886	3.56568	6432.04
12152	1732	1593.6	-138.4	-7.99076	3.39403	19154.56
7220	1968	2120.2	152.2	7.73374	3.36638	23164.84
15096	862	767.2	-94.8	-10.9977	3.32151	8987.04
16027	2123	2276.6	153.6	7.23504	3.27491	23592.96
6964	2867	3038.6	171.6	5.98535	3.15791	29446.56
7164	255	207.6	-47.4	-18.5882	3.11667	2246.76
12210516	512	447.6	-64.4	-12.5781	2.94006	4147.36
7172	1653	1537.4	-115.6	-6.99335	2.89434	13363.36
6962	1060	968	-92	-8.67925	2.88914	8464
13643	2430	2573.6	143.6	5.90947	2.87027	20240.96
12870	581	649.6	68.6	11.8072	2.76554	4705.96
7222	919	846.6	-72.4	-7.87813	2.43673	5241.76
15953	935	862.8	-72.2	-7.72193	2.40814	5212.84
7276	239	277.4	38.4	16.0669	2.38975	1474.56
7408	1077	1004.2	-72.8	-6.75952	2.25678	5299.84
7106	916	849.6	-66.4	-7.24891	2.23479	4408.96
7116	2006	1909.4	-96.6	-4.81555	2.18325	9331.56
15955	1812	1890.2	78.2	4.31567	1.81757	6115.24
7040	73	59	-14	-19.1781	1.73228	196
7140	127	147	20	15.748	1.70872	400
7092	34	44.4	10.4	30.5882	1.66108	108.16
7180	969	1020.2	51.2	5.2838	1.62348	2621.44
12211631	24	32.4	8.4	35	1.58181	70.56
16517	499	534.8	35.8	7.17435	1.57463	1281.64
7356	940	892.6	-47.4	-5.04255	1.56588	2246.76
12211562	796	754.6	-41.4	-5.20101	1.48684	1713.96
7724	1010	1055.8	45.8	4.53465	1.42507	2097.64
6940	470	501.4	31.4	6.68085	1.42477	985.96
10618	1565	1618.8	53.8	3.4377	1.34842	2894.44
7118	1884	1831.8	-52.2	-2.7707	1.21104	2724.84
7438	53	61.8	8.8	16.6038	1.16152	77.44
16119	1045	1008.6	-36.4	-3.48325	1.13095	1324.96
7532	2045	1994.6	-50.4	-2.46465	1.12144	2540.16
12210650	493	469.6	-23.4	-4.74645	1.06662	547.56
12211719	778	749.2	-28.8	-3.7018	1.04222	829.44
12126	1442	1479.4	37.4	2.59362	0.978568	1398.76
7210	209	222.6	13.6	6.50718	0.925791	184.96
12155	1558	1593.2	35.2	2.25931	0.886788	1239.04
12211629	3	1.8	-1.2	-40	0.774597	1.44
12211622	1489	1517.4	28.4	1.90732	0.732504	806.56
12211534	27	30.8	3.8	14.0741	0.708862	14.44
7410	162	170.8	8.8	5.4221	0.682191	77.44
7400	854	874	20	2.34192	0.680114	400
7428	1199	1214.4	15.4	1.2844	0.642324	237.16
7192	798	810.4	12.4	1.55388	0.43726	153.76
7166	502	493.4	-8.6	-1.71315	0.385491	73.96
12211564	24	22.2	-1.8	-7.5	0.374513	3.24
12210676	17	15.6	-1.4	-8.23529	0.346764	1.96
17011	98	101.2	3.2	3.26531	0.320642	10.24
7442	312	315.6	3.6	1.15385	0.203224	12.96
6920	749	744.2	-4.8	-0.64085	0.17567	23.04
7524	792	787.4	-4.6	-0.58081	0.163692	21.16
12210282	960	955.6	-4.4	-0.45833	0.142172	19.36
7214	58	57.4	-0.6	-1.03448	0.078888	0.36
12211544	496	495	-1	-0.20161	0.044924	1
Mean	848.598	856.312	7.71463	0.909104		



Object	Count - Li	Count - Ai	Absolute	Relative	Diff#2	Obs/N
8062 (331)	47	233.2	186.2	396.17	15.7312	34670.44
13284072	8	115	107	1337.5	13.6441	11449
13284134	10	75.2	65.2	652	9.98948	4251.04
13564 (34)	514	736.6	222.6	43.3074	8.30186	49550.76
13284124	16	70.4	54.4	340	8.2767	2959.36
8218 (331)	2	36.2	34.2	1710	7.82545	1169.64
10376 (33)	260	399.2	139.2	53.5385	7.66736	19376.64
12426 (13)	63	16	-47	-74.6032	7.47824	2209
8176 (130)	1360	1619	259	19.0441	6.71088	67081
					6.03708	11025
					5.23414	4356
					5.14151	13595.56
					4.90774	852.64
					4.73587	7089.64
					4.69042	121
					4.67844	23409
					4.58382	15775.36
					4.13811	2342.56
					4.05032	1296
					3.98401	25664.04
					3.97285	26830.44
					3.79991	217.0701
					3.72853	3969
					3.68754	1049.76
					3.66606	15090.76
					3.65043	4634
					3.57438	665.64
					3.54299	1281.64
					3.47326	21550.24
					3.4641	36
					3.43478	1747.24
					3.39638	5212.84
					3.30171	249.64
					3.24153	2580.64
					3.08618	26.35108
					2.97873	2061.16
					2.9511	12904.56
					2.93715	289
					2.8528	84.64
					2.76353	345.96
					2.59657	466.56
					2.44949	9
					2.33487	665.64
					2.25024	765.4463
					2.1383	1413.76
					2.12345	3317.76
					2.03371	6496.36
					1.99208	707.56
					1.85971	424.36
					1.68533	169
					1.63107	96.04
					1.5354	948.64
					1.41014	2460.16
					1.3847	70.56
					1.34443	125.44
					1.33231	112.36
					1.32605	2342.56
					1.17297	134.56
					1.16409	1102.24
					1.13454	1329.56
					1.09521	184.96
					1.07081	1521
					1.06964	40.96
					1.06317	1648.36
					1.02056	237.16
					1	36
					0.851838	14.44
					0.699512	29.16
					0.621598	441
					0.604259	501.76
					0.524912	7.84
					0.414258	129.96
					0.3114	0.64
					0.196352	0.64
					0.1557	0.017778
					0.113694	23.04
					0.028088	0.004444
					0	0
					0	0
					0	0
					0	0
					0	0
					0	0
Mean	405.358	415.447	10.0892	2.48895		

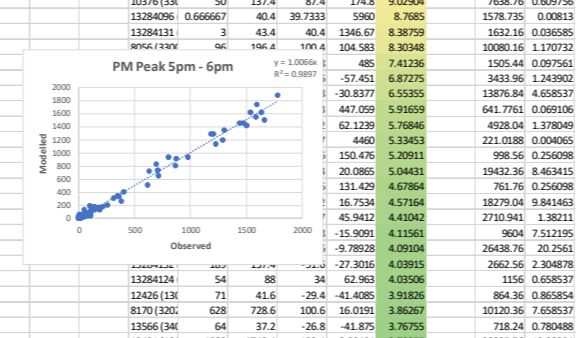
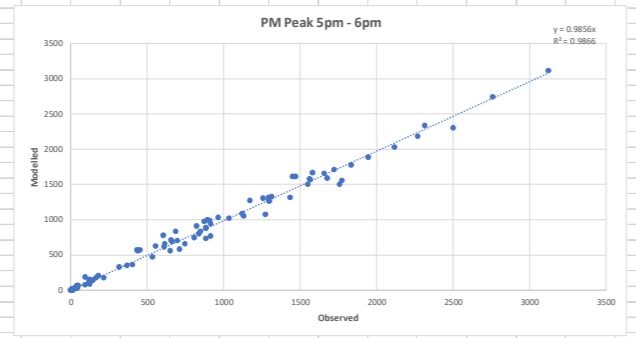


Object	Count	SC Count	Ai Absolute	Relative E GEH	11.5248 Diff#2	Obs/N
7228	93	242.2	149.2	160.43	11.5248	22260.64 1.134146
12210663	413	609.2	196.2	47.5061	8.67853	38494.44 5.036585
7172	1836	1531.6	-304.4	-16.5795	7.41821	92659.36 22.39024
7116	1873	1568.8	-306.2	-16.3481	7.38335	93758.44 22.84146
7428	679	844.6	165.6	24.3888	5.99984	27423.36 8.280488
12152	1838	1599	-239	-13.0033	5.76532	57121 22.41463
7540	693	564.6	-128.4	-18.5281	5.12046	16486.56 8.45122
16119	1682	1502.4	-179.6	-10.6778	4.50098	32256.16 20.5122
16517	934	803.8	-130.2	-13.94	4.41699	16952.04 11.39024
7164	568	672.8	104.8	18.4507	4.20751	10983.04 6.926829
12211544	629	735.2	106.2	16.8839	4.06631	11278.44 7.670732
7442	534	628.4	94.4	17.6779	3.9157	8911.36 6.512195
7180	808	707	-101	-12.5	3.6697	10201 9.853659
7210	126	85.2	-36.8	-29.2063	3.54766	1354.24 1.536585
13843	1209	1339.2	121.2	10.0248	3.40149	14689.44 14.7439
12210320	1270	1392.8	122.8	9.66929	3.36546	15079.84 15.4878
7410	101	70	-31	-30.6931	3.35258	961 1.231707
7730	487	559.2	72.2	14.8255	3.15678	5212.84 5.939024
17011	677	597.6	-79.4	-11.7282	3.1452	6304.36 8.256098
7066	61	38.8	-22.2	-36.3934	3.1427	492.84 0.743902
6964	1216	1328	112	9.21053	3.14032	12544 14.82927
7098	36	57.2	21.2	58.8889	3.10558	449.44 0.439024
6962	2972	3143.4	171.4	5.76716	3.09966	29377.96 36.2439
7276	282	335.6	53.6	19.0071	3.05018	2872.96 3.439024
10618	929	1023.8	94.8	10.2045	3.03385	8987.04 11.32927
12210282	1479	1371.4	-107.6	-7.27519	2.85019	11577.76 18.03659
12210270	1	5.2	5.2	520	2.74064	27.04 0.012195
12211719	1375	1277	-98	-7.12727	2.69125	9604 16.76829
16548	484	545	61	12.6033	2.68929	3721 5.902439
12211629	16	7.4	-8.6	-53.75	2.51423	73.96 0.195122
7036	22	11.8	-10.2	-46.3636	2.48117	104.04 0.268293
7390	933	860.2	-72.8	-7.80279	2.43126	5299.84 11.37805
12211631	13	22.6	9.6	73.8462	2.27542	92.16 0.158537
7214	119	145	26	21.8487	2.26301	676 1.45122
7400	1126	1051.6	-74.4	-6.60746	2.25475	5535.36 13.73171
7254	1066	1140.8	74.8	7.01689	2.25183	5599.04 13
7274	763	825.4	63.4	8.30931	2.24899	4019.56 9.304878
7106	502	457.6	-44.4	-8.84462	2.2027	1971.36 6.121951
7356	1065	1003.6	-61.4	-5.76526	1.90917	3769.96 12.9878
15955	1054	993	-61	-5.78748	1.90672	3721 12.85366
12211562	1374	1307.4	-66.6	-4.84716	1.8189	4435.56 16.7561
12211622	894	948.4	54.4	6.08501	1.79235	2959.36 10.90244
7192	225	200.2	-24.8	-11.0222	1.70087	615.04 2.743902
7126	213	189.2	-23.8	-11.1737	1.67831	566.44 2.597561
7074	1656	1724.6	68.6	4.14251	1.66856	4705.96 20.19512
12211551	702	746.6	44.6	6.35328	1.6572	1989.16 8.560976
16525	2476	2400.8	-75.2	-3.03716	1.52288	5655.04 30.19512
7274	1111	1161.6	50.6	4.55446	1.50108	2503.36 13.54878
7724	2884	2809.6	-74.4	-2.57975	1.39442	5535.36 35.17073
7524	194	213.6	19.6	10.1031	1.37295	384.16 2.365854
12210661	1880	1939.4	59.4	3.19597	1.35926	3528.36 22.92683
12210676	11	7	-4	-36.3636	1.33333	16 0.134146
7166	829	867.6	38.6	4.65621	1.3253	1489.96 10.10976
12210502	664	630.4	-33.6	-5.06024	1.32075	1128.96 8.097561
11897	369	344.4	-24.6	-6.66667	1.30252	605.16 4.5
7222	2438	2375.2	-62.8	-2.57588	1.28014	3943.84 29.73171
7408	830	867	37	4.45783	1.27021	1369 10.12195
12126	1525	1569.2	44.2	2.89836	1.12373	1953.64 18.59756
7140	142	155.4	13.4	9.43662	1.09888	179.56 1.731707
7220	1045	1009.8	-35.2	-3.36842	1.09818	1239.04 12.7439
7532	1153	1117.2	-35.8	-3.10494	1.06259	1281.64 10.06098
12155	1688	1648	-40	-2.36967	0.979404	1600 20.58537
7732	375	392.8	17.8	4.74667	0.908471	316.84 4.573171
7040	38	43.6	5.6	14.7368	0.876714	31.36 0.463415
12870	703	681.2	-21.8	-3.101	0.828652	475.24 8.573171
7092	37	32.6	-4.4	-11.8919	0.74587	19.36 0.45122
7042	1666	1636	-30	-1.80072	0.738325	900 20.31707
12210516	1272	1248.4	-23.6	-1.85535	0.664802	556.96 15.5122
6940	1613	1639.2	26.2	1.6243	0.649722	686.44 19.67073
7438	136	143.6	7.6	5.58824	0.642777	57.76 1.658537
16027	1046	1027.2	-18.8	-1.79732	0.582919	353.44 12.7561
12210262	781	794.6	13.6	1.74136	0.484541	184.96 9.52439
15953	1935	1954.4	19.4	1.00258	0.439922	376.36 23.59756
7118	2299	2278.2	-20.8	-0.90474	0.434789	432.64 28.03659
7104	40	37.8	-2.2	-5.5	0.352734	4.84 0.487805
12210514	744	750.6	6.6	0.887097	0.241433	43.56 9.073171
12211534	20	19.2	-0.8	-4	0.180702	0.64 0.243902
12210650	1624	1617.6	-6.4	-0.39409	0.15897	40.96 19.80488
17220	73	71.8	-1.2	-1.64384	0.14103	1.44 0.890244
12211564	30	25.8	-0.2	-0.66667	0.036576	0.04 0.365854
6920	1622	1620.6	-1.4	-0.08631	0.034789	1.96 19.78049
15996	1837	1836.8	-0.2	-0.01089	0.004666	0.04 22.40244
Mean	904.366	899.776	-4.59024	-0.50757		



Object	Count	SC Count	Ai Absolute	Relative E GEH	Diff#2	Obs/N
8056 (330)	64	176.2	112.2	175.312	10.2381	12588.84 0.780488
13284072	7	66.4	59.4	848.571	9.80513	3528.36 0.085366
13284096	3	48.2	45.2	1506.67	8.93943	2043.04 0.036585
10376 (33)	67	157.8	90.8	135.522	6.56451	6244.64 0.817073
8062 (331)	5	46.4	41.4	828	8.16646	1713.96 0.060976
				50.8	-60.198	7.23604 3696.64 1.231707
				250	-17.4825	6.92046 62500 17.43902
				10.8	84.1667	6.91838 6528.64 1.170732
				9.4	-30.0756	6.50124 14256.36 4.841463
				10.6	203	6.39549 1648.36 0.243902
				11.2	312	6.16644 973.44 0.121951
				333	495.714	5.74162 535.1496 0.056911
				12.8	-13.1451	5.72317 54195.84 21.59756
				17.4	-14.2641	5.64409 43014.76 17.73171
				2.8	56.0714	5.24427 3943.84 1.365854
				15.2	-45.6566	5.17121 2043.04 1.207317
				12.4	-12.2296	5.13467 40965.76 20.18293
				14.6	-16.229	5.05366 20909.16 10.86585
				14	1400	4.94975 196 0.012195
				14.4	-44.1379	4.66355 1474.56 1.060976
13284133	1041	903.8	-137.2	-13.1796	4.39979	18823.84 12.69512
10379 (33)	829	707.2	-121.8	-14.6924	4.39479	14835.24 10.10976
13564 (34)	141	198.2	57.2	40.5674	4.39221	3271.84 1.719512
13284123	253	188.2	-64.8	-25.6126	4.36287	4199.04 3.085366
8208 (180)	1583	1414.8	-168.2	-10.6254	4.3445	28291.24 19.30488
13566 (34)	74	41.4	-32.6	-44.0541	4.2297	1062.76 0.902439
13284108	9	0	-9	-100	4.24264	81 0.109756
8320 (130)	652	549.2	-102.8	-15.7669	4.1947	10567.84 7.95122
12421 (13)	1635	1796.4	161.4	9.87156	3.89657	26049.96 19.93902
10375 (33)	52	83.8	31.8	61.1538	3.89116	1011.24 0.634146
8308 (130)	1789	1946.8	157.8	8.2057	3.65115	24900.84 21.81707
13284122	1125	1007.4	-117.6	-10.4533	3.60154	13829.76 13.71951
13284073	218	169	-49	-22.4771	3.52254	2401 2.658537
13284135	416	350.8	-65.2	-15.6731	3.32983	4251.04 5.073171
				12118	1703	1574.2 -128.8 -7.56312 3.18185 16589.44 20.76829
10374 (33)	357	299.4	-57.6	-16.1345	3.17946	3317.76 4.353659
8180 (130)	135	100.6	-34.4	-25.4815	3.16946	1183.36 1.646341
13284068	967	873.4	-93.6	-9.67942	3.08557	8760.96 11.79268
8232 (331)	15	5.2	-9.8	-65.3333	3.08365	96.04 0.182927
13284069	34	54	20	58.8235	3.01511	400 0.414634
8312 (130)	21	9.4	-11.6	-55.2381	2.97534	134.56 0.256098
8182 (130)	1726	1609.2	-116.8	-6.76709	2.8602	13642.24 21.04878
13284112	4	0	-4	-100	2.82843	16 0.04878
13284130	129	99	-30	-23.2558	2.80976	900 1.573171
8224 (331)	4.33333	0.2	-4.13333	-95.3846	2.74541	17.08442 0.052845
8240 (330)	41	25.4	-15.6	-38.0488	2.70742	243.36 0.5
13284121	52	35.4	-16.6	-31.9231	2.51112	275.56 0.634146
8180 (130)	135	100.6	-34.4	-25.4815	2.44949	9 0.036585
13565 (34)	164	134.6	-29.4	-17.9268	2.40612	864.36 0.2
8314 (130)	877	946.8	69.8	7.95895	2.31144	4872.04 10.69512
13563 (34)	388	344.6	-43.4	-11.1856	2.26763	1883.56 4.731707
8184 (130)	220	189.2	-30.8	-14	2.15327	948.64 2.682927
8050 (330)	1711	1629	-82	-4.79252	2.00658	6724 20.86585
13284110	2	0	-2	-100	2	4 0.02439
13284113	2	0	-2	-100	2	4 0.02439
12422 (13)	182	159.2	-22.8	-12.5275	1.7456	519.84 2.219512
13284126	38	28	-10	-26.3158	1.74078	100 0.463415
12424 (13)	131	150.2	19.2	14.6565	1.61923	368.64 1.597561
13284109						

Object	Count	SC Count	Ai Absolute	Relative E GEH	7.98611 Diff#2	Obs/N
7228	96	191.8	95.8	99.7917	7.98611	9177.64 1.170732
7240	608	782.4	174.4	28.6842	6.61442	30415.36 7.414634
12210663	435	578.4	143.4	32.9655	6.3705	20563.56 5.304878
7172	1759	1519.2	-248.8	-14.1444	6.15382	61901.44 21.45122
7532	1276	1080.6	-195.4	-15.3135	5.69242	38181.16 15.562098
7428	687	840.2	153.2	22.2999	5.54403	23470.24 8.378049
7116	1776	1555	-221	-12.4437	5.41527	48841 21.65854
7390	887	733.2	-153.8	-17.3393	5.40365	23654.44 10.81707
16548	441	557.8	116.8	26.4853	5.22659	13642.24 5.378049
7730	457	572.8	115.8	25.3392	5.10325	13409.64 5.573171
16517	914	766.6	-147.4	-16.14634	5.08488	21726.76 11.14634
12210502	713	589	-124	-17.3913	4.85994	15376 8.695122
7098	39	73.8	34.8	89.2308	4.63383	1211.04 0.47561
6940	1449	1618.8	169.8	11.7184	4.3355	28832.04 17.67073
7222	2933	2310	-623	-21.2475	3.92427	37249 30.52439
12210270	0	7.6	7.6	inf	3.89872	57.76 0
12126	1470	1619.4	149.4	10.1633	3.80127	22320.36 17.92683
7210	127	89	-38	-29.9213	3.65655	1444 1.54878
17011	653	564.4	-88.6	-13.5681	3.59114	7849.76 7.963415
16027	896	1005	109	12.1652	3.5355	11881 10.92683
7220	876	980.4	104.4	11.9178	3.42673	10899.36 10.68293
12210282	1434	1314.4	-119.6	-8.34031	3.22631	14304.16 17.4878
7540	746	665.4	-80.6	-10.8043	3.03407	6496.36 9.097561
7164	557	629.2	72.2	12.9623	2.96465	5212.84 6.792683
13643	1175	1276.8	101.8	8.66883	2.9075	10363.24 14.32927
12211629	16	6.4	-9.6	-60	2.86855	92.16 0.195122
7166	825	907.6	82.6	10.0121	2.80638	6822.76 10.06298
15955	908	990.6	82.6	9.09692	2.68089	6822.76 11.07317
7126	217	180	-37	-17.0507	2.62616	1369 2.646341
7106	535	477.4	-57.6	-10.7664	2.56013	3317.76 6.52439
7400	1133	1052	-81	-7.14916	2.45061	6561 13.81707
12210262	811	744	-67	-8.26141	2.40284	4489 9.890244
12211631	13	23.2	10.2	78.4615	2.39751	104.04 0.158537
7410	97	75.6	-21.4	-22.0619	2.30361	457.96 1.182927
7438	126	152.4	26.4	20.9524	2.23761	696.96 1.536585
7074	1584	1673.6	89.6	5.65657	2.22011	8028.16 19.31707
7036	23	13.6	-9.4	-40.8696	2.19737	88.36 0.280488
12211551	657	714.4	57.4	8.78668	2.19202	3294.76 8.012195
17220	52	68.2	16.2	31.1538	2.08967	262.44 0.634146
7732	403	362.2	-40.8	-10.1241	2.08587	1664.64 4.914634
12152	1677	1596.4	-80.6	-4.8062	1.99228	6496.36 20.45122
7524	182	209.8	27.8	15.2747	1.98622	772.84 2.219512
7274	968	1030	62	6.40496	1.96159	3844 11.80488
12210676	13	7	-6	-46.1538	1.89737	36 0.158537
12210661	2115	2030.8	-84.2	-3.98109	1.84937	7089.64 25.79268
16525	2271	2185.8	-85.2	-3.75165	1.80486	7259.04 27.69512
12870	617	660.8	43.8	7.09887	1.73284	1918.44 7.52439
7036	48	37.2	-10.8	-22.15	1.65447	116.64 0.385366
12211562	1256	1306.8	50.8	4.04459	1.41913	2580.64 15.31707
12210514	838	799.2	-38.8	-4.63007	1.35611	1505.44 10.21951
7192	166	183.6	17.6	10.6024	1.3312	309.76 2.02439
15953	1948	1889.8	-58.2	-2.98768	1.32861	3387.24 23.7561
15996	1834	1784	-50	-2.72628	1.17558	2500 22.36585
12211544	662	691.4	29.4	4.44109	1.13018	864.36 8.073171
7254	1124	1089	-35	-3.11388	1.05219	1225 13.70732
12211534	17	21.6	4.6	27.0588	1.04708	21.16 0.207317
16119	1550	1509.6	-40.4	-2.60645	1.03291	1632.16 18.90244
10618	917	948.2	31.2	3.4024	1.02166	973.44 11.18293
11897	370	350.8	-19.2	-5.18919	1.01137	368.64 4.512195
12211719	1299	1263.4	-35.6	-2.74057	0.994584	1267.36 15.84146
7214	123	133.2	10.2	8.29268	0.901209	104.04 1.5
7092	35	31	-4	-11.4286	0.696311	16 0.426829
7040	40	44	4	10	0.617213	16 0.487805
12210320	1292	1314	22	1.70279	0.609467	484 15.7561
7408	848	832.8	-15.2	-1.79245	0.524325	231.04 10.34146
7104	41	38	-3	-7.31707	0.477334	9 0.5
7180	698	709.6	11.6	1.66189	0.437254	134.56 8.512195
7276	320	327.2	7.2	2.25	0.404047	51.84 3.902439
7356	1034	1021.2	-12.8	-1.23791	0.399299	163.84 12.60976
7274	2759	2736.6	-22.4	-0.70315	0.369991	376.36 33.64634
7118	2316	2333.6	17.6	0.759991	0.365022	309.76 28.2439
7042	1564	1578.2	14.2	0.907928	0.35825	201.64 19.07317
12210516	1314	1326.6	12.6	0.958904	0.346764	158.76 16.02439
7140	149	144.8	-4.2	-2.81879	0.346528	17.64 1.817073
12210650	1565	1574.8	9.8	0.626198	0.247338	96.04 19.08537
12211564	32	33.2	1.2	3.75	0.210171	1.44 0.390244
6920	1722	1714.2	-7.8	-0.45296	0.188179	60.84 21
7442	612	615.6	3.6	0.588235	0.145308	12.96 7.463415
6964	1293	1288.8	-4.2	-0.32483	0.116897	17.64 15.76829
12155	1659	1663	4	0.241189	0.081847	16 20.23171
6962	3121	3117.4	-3.6	-0.11535	0.064459	12.96 38.08298
12211622	887	888.8	1.8	0.202991	0.060407	3.24 10.81707
Mean	886.22	883.149	-3.07073	-0.3465		



Link

Turn

RMSE

RMSE

<5 87%

<7.5 94%

<10 100%

82 RMSE 9%

80 RMSE 14%

<5 87%

<7.5 94%

<10 100%

82 RMSE 9%

80 RMSE 14%

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<7.5 94%

<10 100%

82 RMSE 9%

80 RMSE 14%

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<7.5 94%

<10 100%

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82 RMSE 9%

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82 RMSE 9%

80 RMSE 14%

<5 87%

<7.5 94%

<10 100%

82 RMSE 9%

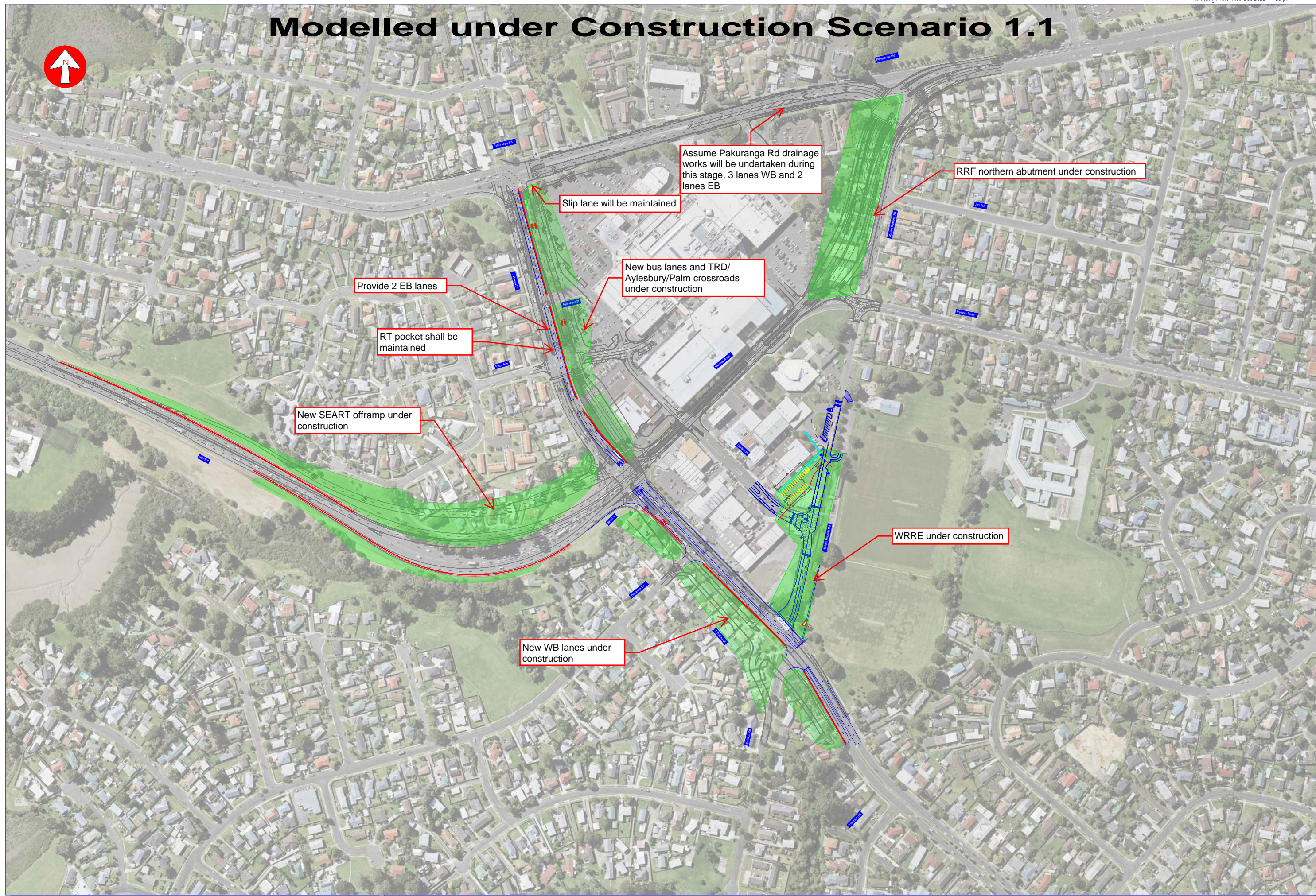
Appendix I

Travel Time Validation Tables

Appendix K

EB2 – Indicative Construction Staging Diagrams

Modelled under Construction Scenario 1.1



Assume Pakuranga Rd drainage works will be undertaken during this stage, 3 lanes WB and 2 lanes EB

RRF northern abutment under construction

Slip lane will be maintained

Provide 2 EB lanes

New bus lanes and TRD/Aylesbury/Palm crossroads under construction

RT pocket shall be maintained

New SEART offramp under construction

WRRE under construction

New WB lanes under construction

Stage-1

Design	
Drawn	
Dsg Verifier	
Dwg Check	
Original Scale (A3)	

Title

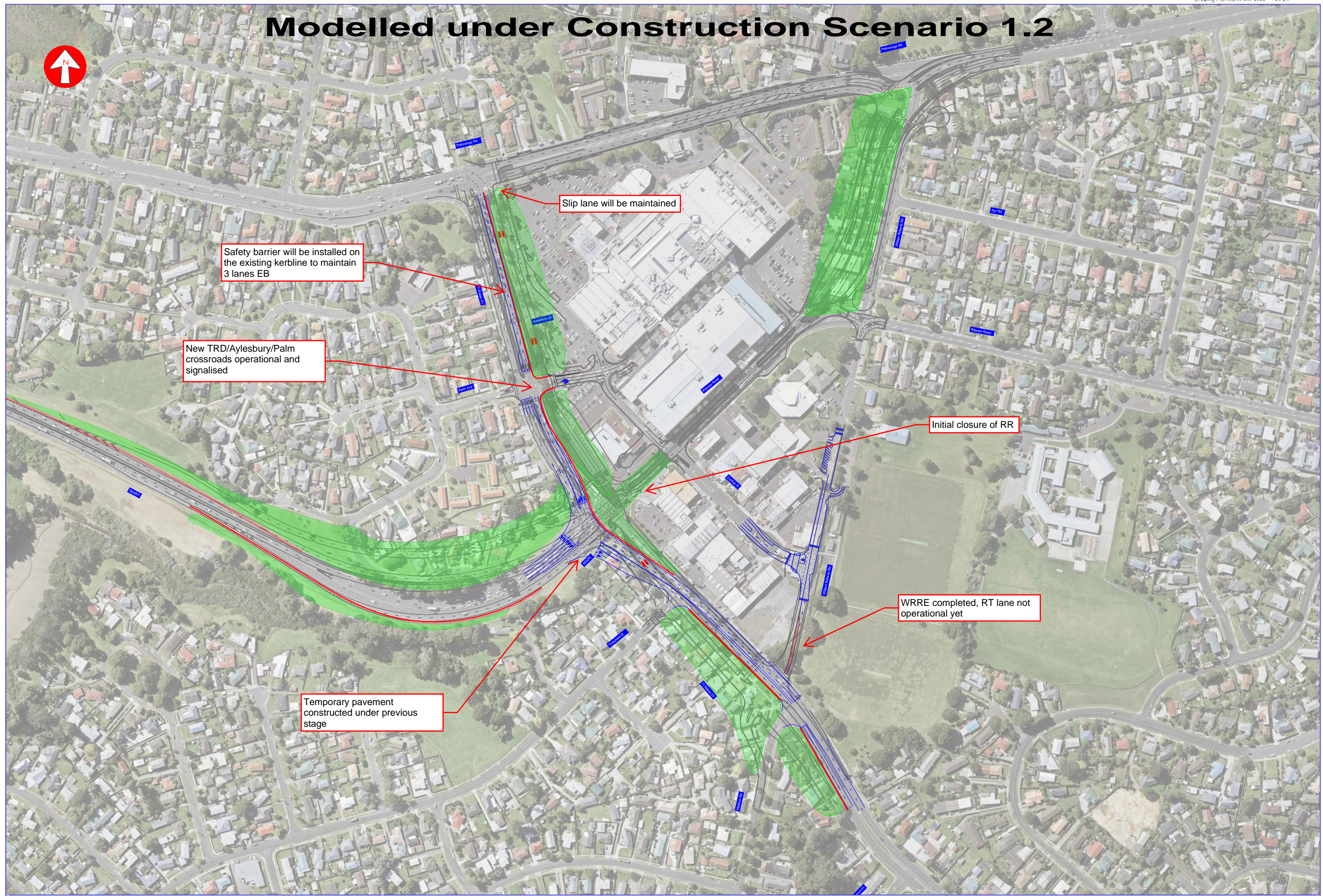
Discipline

Drawing No

Rev

1145

Modelled under Construction Scenario 1.2



Stage-2

Design	
Drawn	
Dsg Verifier	
Dwg Check	
Original Scale (A3)	

Title

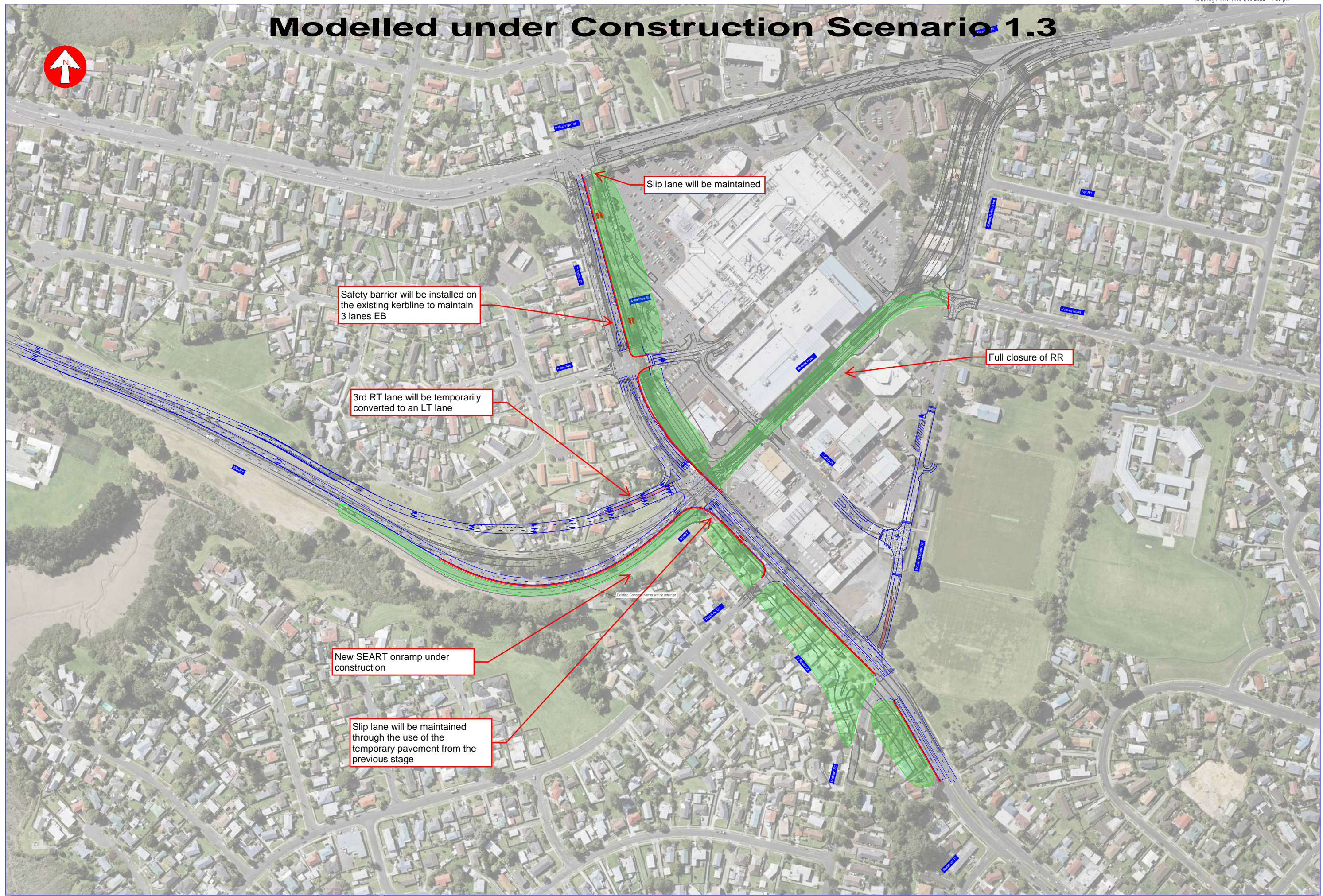
Discipline

Drawing No

Rev

1146

Modelled under Construction Scenario 1.3



Slip lane will be maintained

Safety barrier will be installed on the existing kerbline to maintain 3 lanes EB

3rd RT lane will be temporarily converted to an LT lane

Full closure of RR

Existing Concrete barrier will be retained

New SEART onramp under construction

Slip lane will be maintained through the use of the temporary pavement from the previous stage

Stage-3

Design		
Drawn		
Dsg Verifier		
Dwg Check		
Original Scale (A3)		

DO NOT SCALE

Title

Discipline

Drawing No

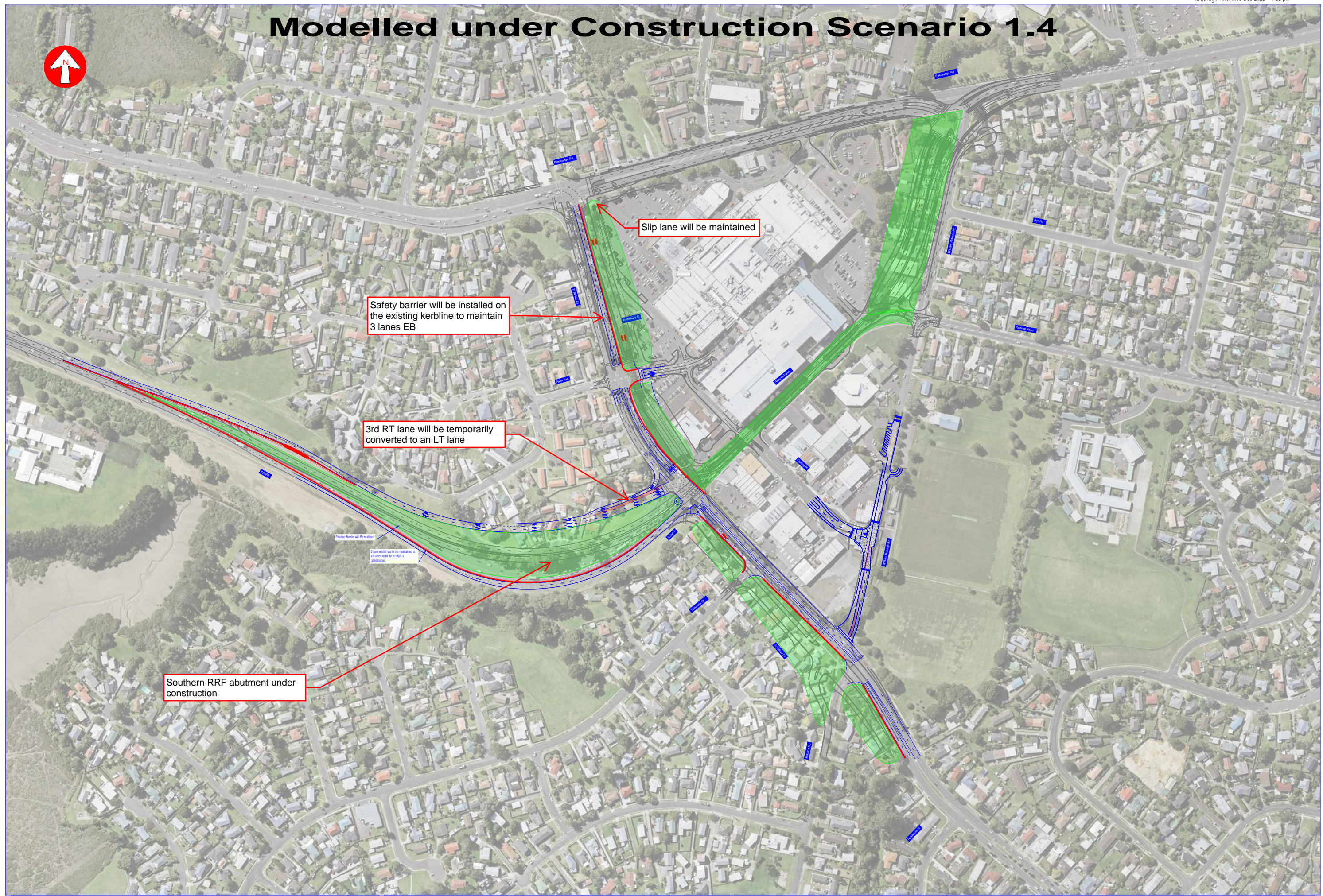
Rev

1147

IN DOUBT ASK

Document No. EBS-STAGGING REV02.DWG

Modelled under Construction Scenario 1.4



Southern RRF abutment under construction

3rd RT lane will be temporarily converted to an LT lane

Safety barrier will be installed on the existing kerbline to maintain 3 lanes EB

Slip lane will be maintained

Existing Barrier will be retained
3 lane width has to be maintained at all times until the bridge is operational

Stage-4

Design	
Drawn	
Dsg Verifier	
Dwg Check	
Original Scale (A3)	

DO NOT SCALE

Title

Discipline

Drawing No

Rev

1148

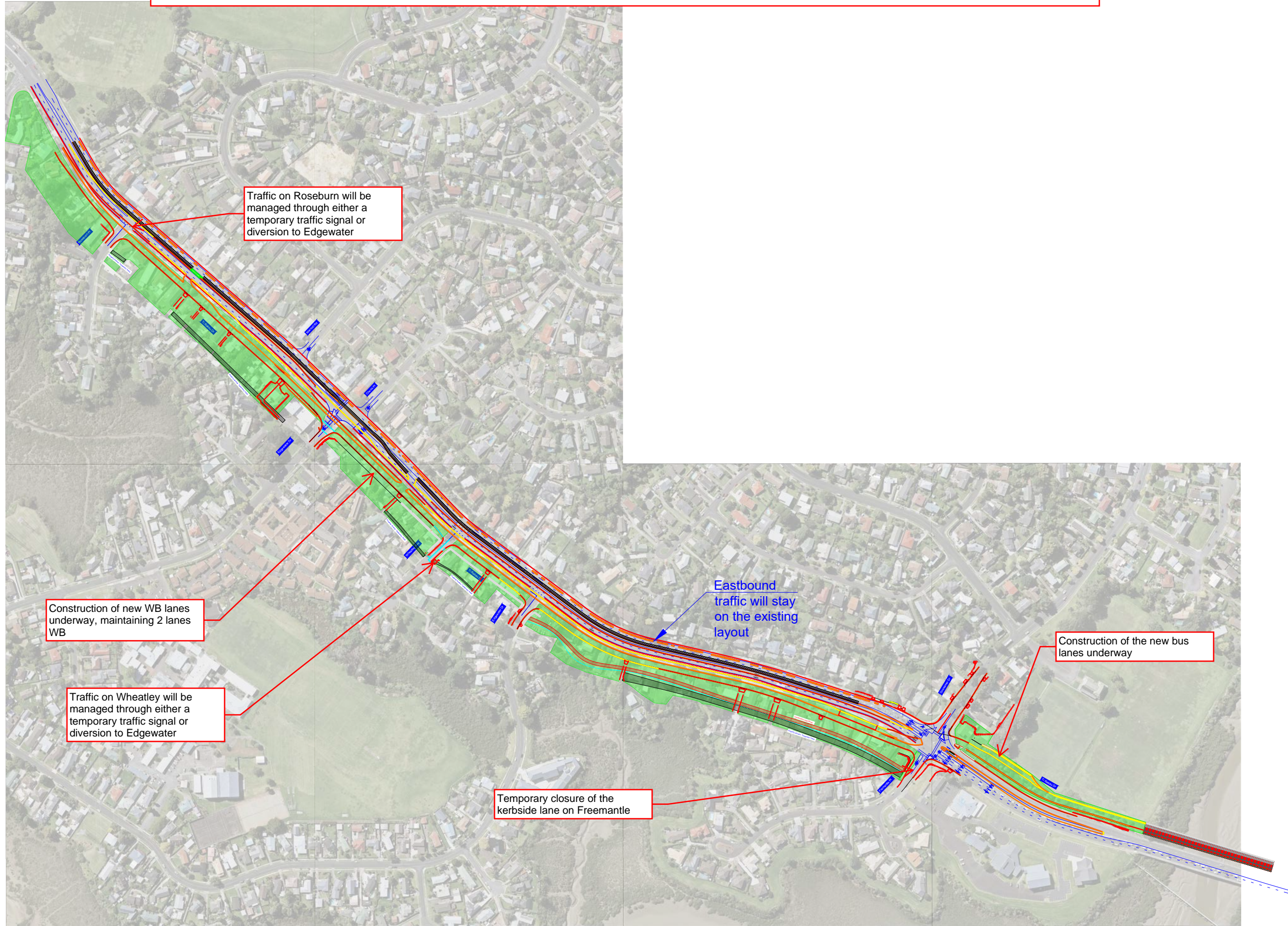
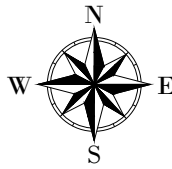
IN DOUBT ASK

Document No. EBS-STAGGNG REV02 DWG

Appendix L

EB3R – Indicative Construction Staging Diagrams

Modelled under Construction Scenario 1.1

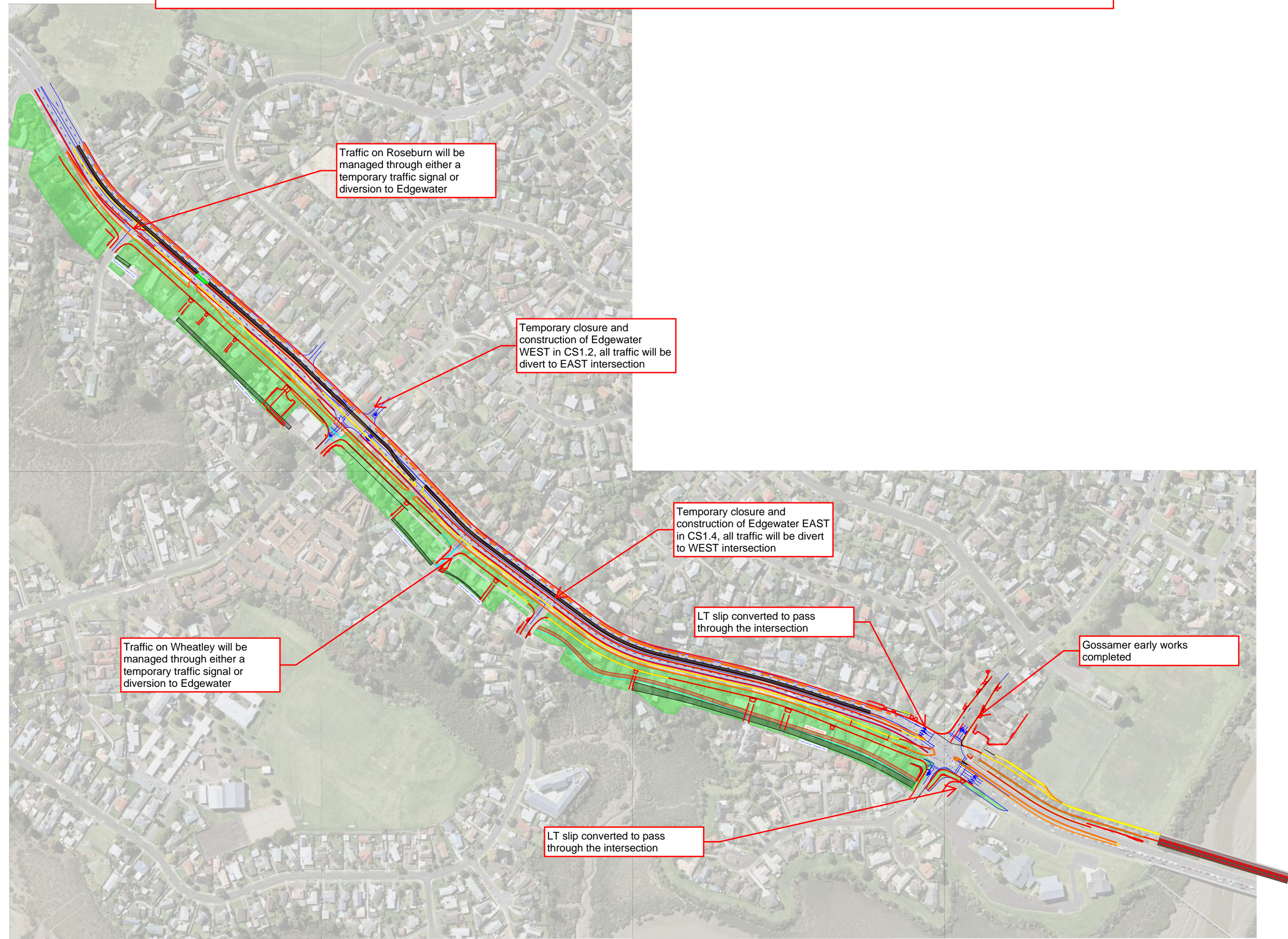
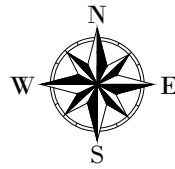


Design	PN	#####
Drawn	##	#####
Dsg Verifier	###	#####
Dwg Check	###	#####
Original Scale (A3)		

Title	TRW-3	Discipline	Traffic
Page 1 of 6		Drawing No	EB3R Staging
		Rev	#

1151

Modelled under Construction Scenario 1.2, 1.3 and 1.4



Traffic on Roseburn will be managed through either a temporary traffic signal or diversion to Edgewater

Temporary closure and construction of Edgewater WEST in CS1.2, all traffic will be divert to EAST intersection

Temporary closure and construction of Edgewater EAST in CS1.4, all traffic will be divert to WEST intersection

Traffic on Wheatley will be managed through either a temporary traffic signal or diversion to Edgewater

LT slip converted to pass through the intersection

Gossamer early works completed

LT slip converted to pass through the intersection

Design	PN	#####
Drawn		#####
Dsg Verifier		#####
Dwg Check		#####
Original Scale (A3)		

Title	TRW-33	Discipline	Traffic
Page	4 of 6	Drawing No	EB3R Staging
		Rev	#

Appendix M

Construction Scenario 1.2 – Phasing Diagrams

PHASING SUMMARY

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 84 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Map Extract Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

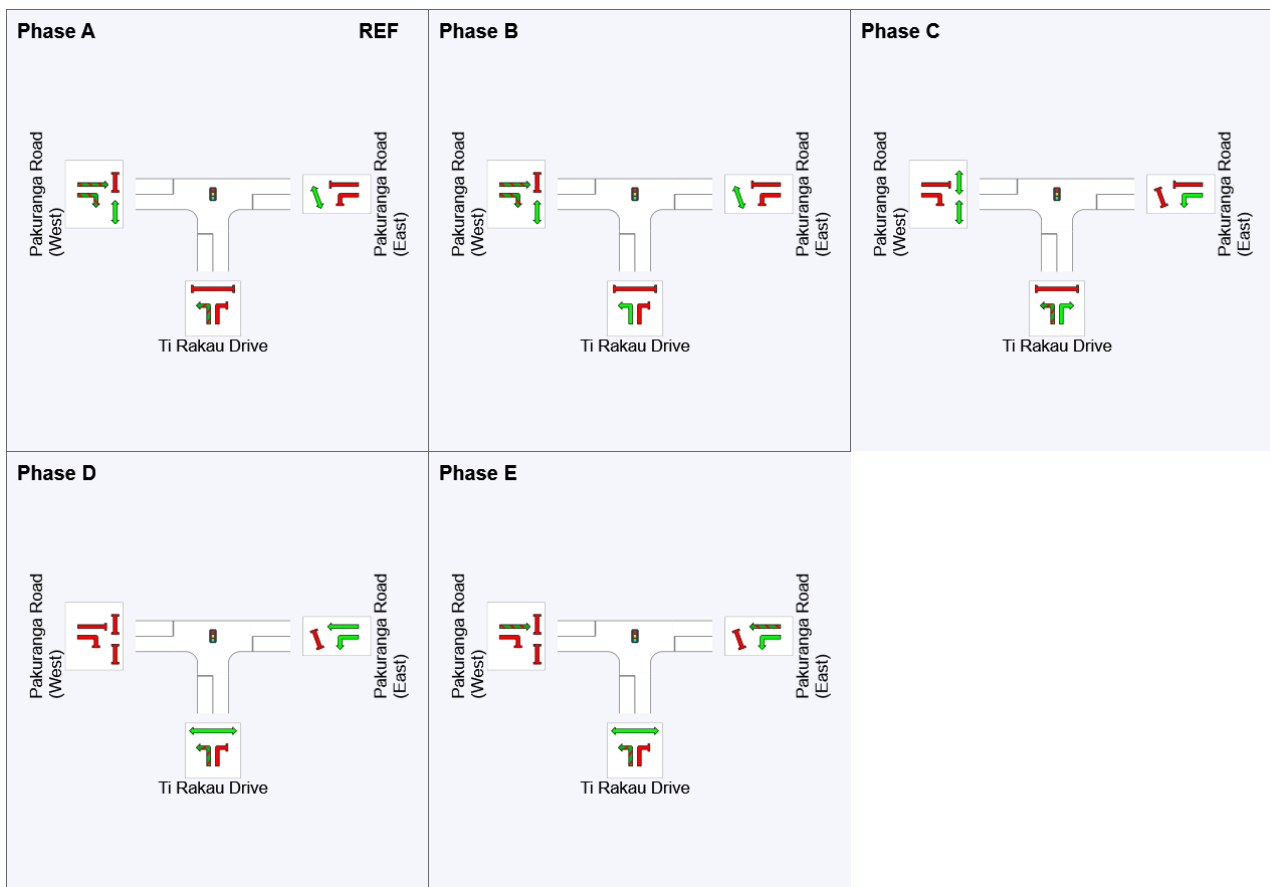
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

Phase	A	B	C	D	E
Phase Change Time (sec)	0	13	25	47	59
Green Time (sec)	7	6	16	6	19
Phase Time (sec)	13	12	22	12	25
Phase Split	15%	14%	26%	14%	30%










See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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PHASING SUMMARY

Site: 1.4v [1.4 William Roberts/ Pakuranga Rd - PD - Conversion (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 61 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Convert Function Default

Reference Phase: Phase B

Input Phase Sequence: A, B, C

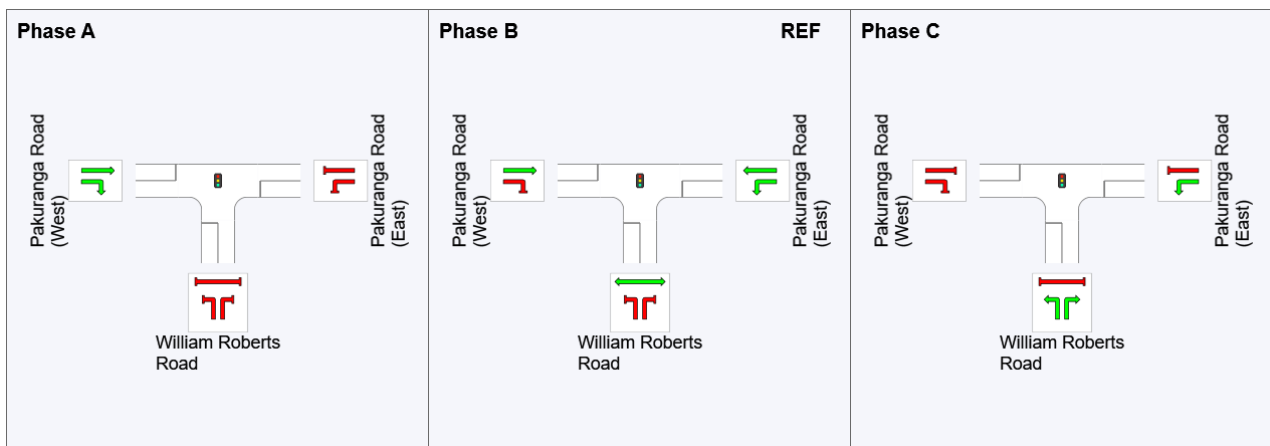
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	49	0	32
Green Time (sec)	6	26	11
Phase Time (sec)	12	32	17
Phase Split	20%	52%	28%

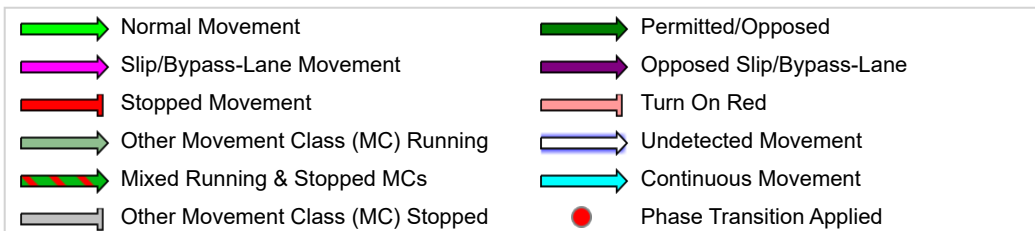
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Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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PHASING SUMMARY

Site: 1.5 [1.5 Saint Kentigern/ Pakuranga Rd - PD (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 88 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Leading Right Turn

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D

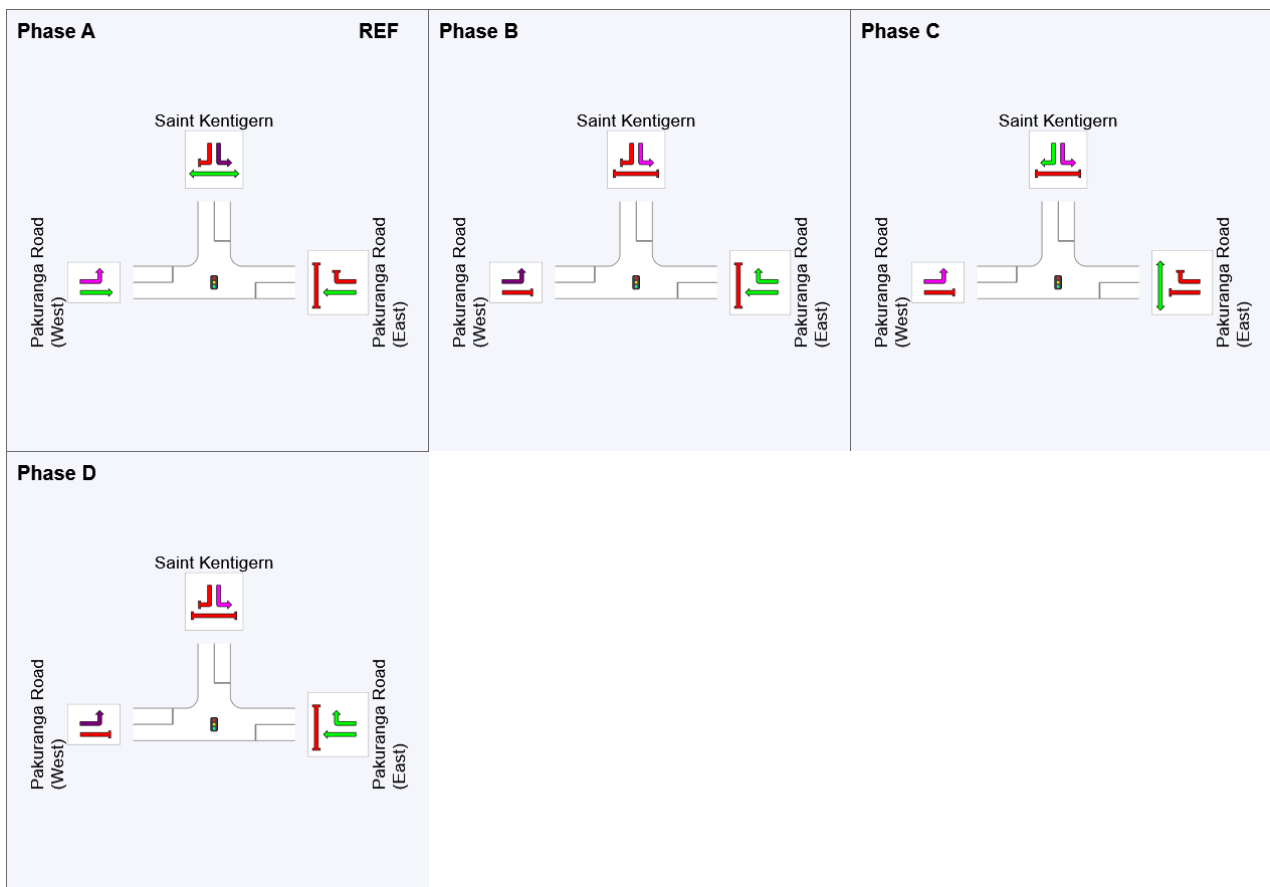
Output Phase Sequence: A, B, C, D

Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	0	36	48	76
Green Time (sec)	30	6	22	6
Phase Time (sec)	36	12	28	12
Phase Split	41%	14%	32%	14%











See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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PHASING SUMMARY

Site: 4.0 [4.0 Palm Ave / Aylesbury St - Import (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 80 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Green Split Priority has been specified

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D

Output Phase Sequence: A, B, C, D

Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	0	28	40	68
Green Time (sec)	22	6	22	6
Phase Time (sec)	28	12	28	12
Phase Split	35%	15%	35%	15%

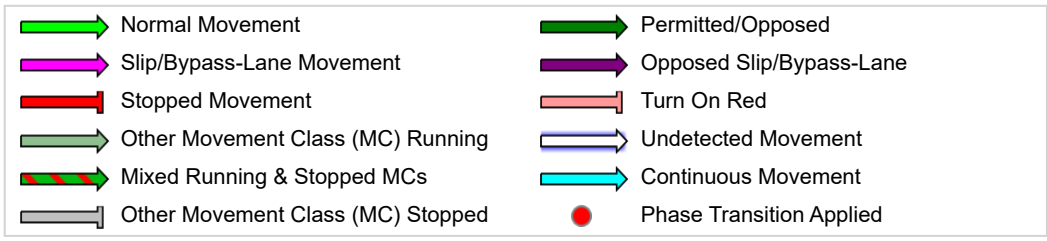
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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PHASING SUMMARY

Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 61 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Map Extract Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C

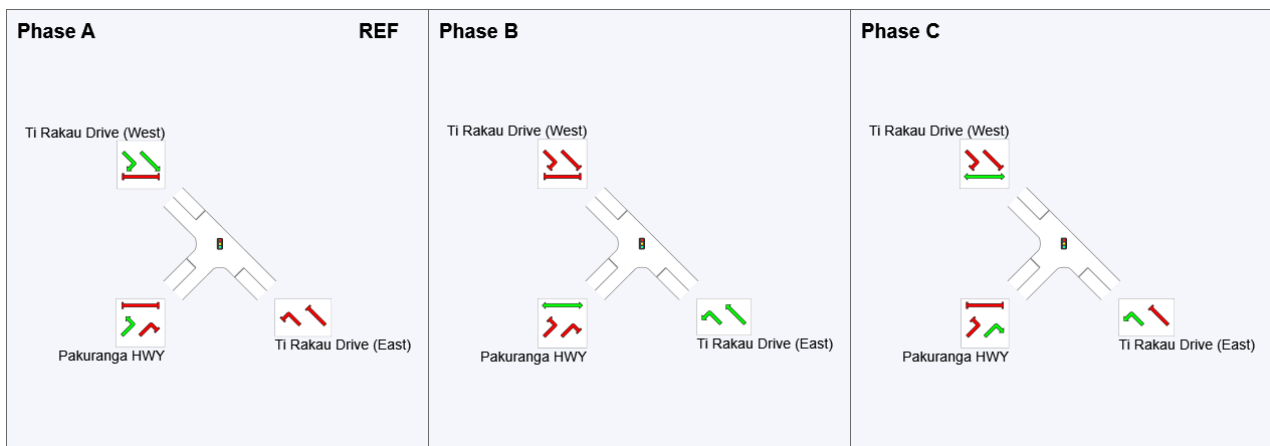
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	25	44
Green Time (sec)	19	13	11
Phase Time (sec)	25	19	17
Phase Split	41%	31%	28%

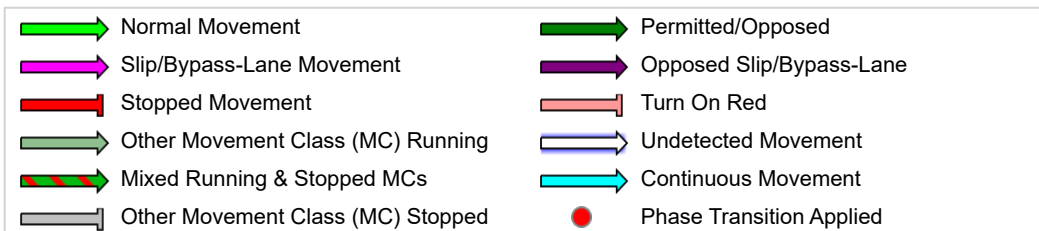
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



PHASING SUMMARY

Site: 7.0 [7.0 Mattson Rd/ Ti Rakau Dr (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Map Extract Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C

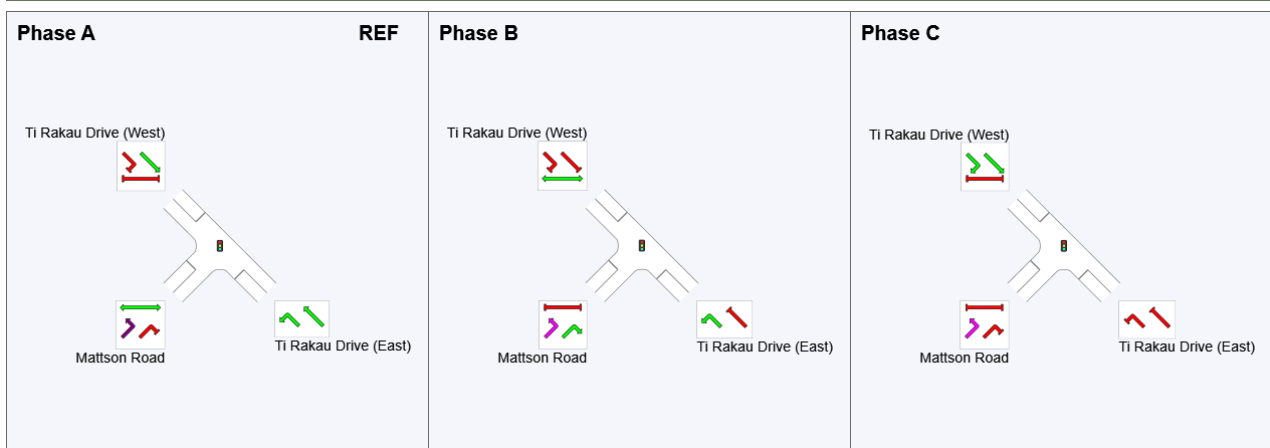
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	50	68
Green Time (sec)	44	12	6
Phase Time (sec)	50	18	12
Phase Split	63%	23%	15%

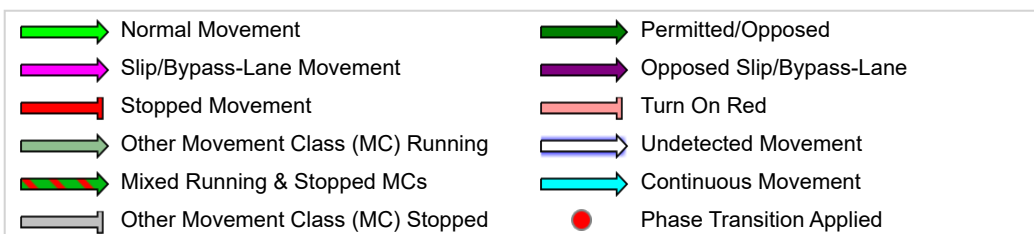
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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PHASING SUMMARY

Site: 10.0 [10.0 Edgewater Dr (West) / Chevis Pl (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C

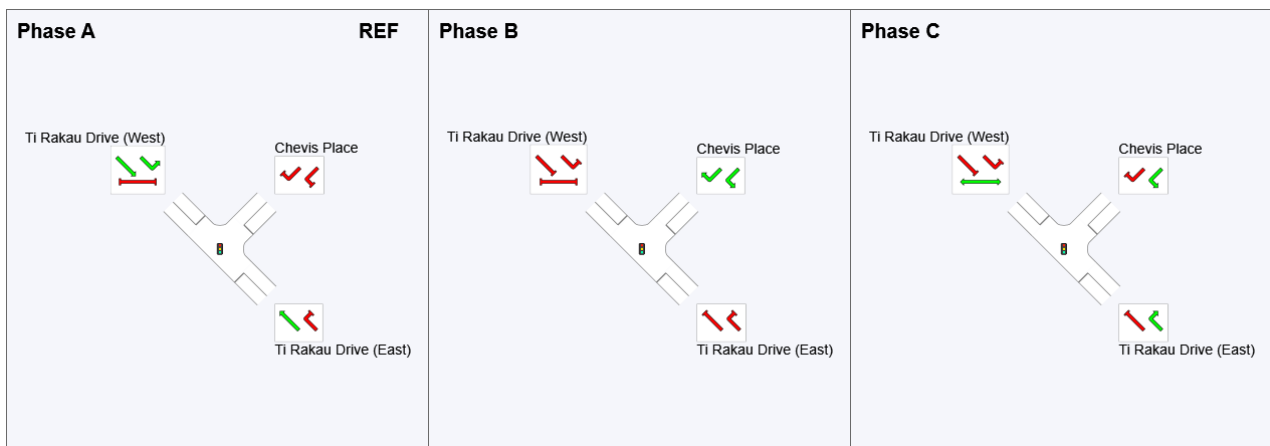
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	42	54
Green Time (sec)	36	6	10
Phase Time (sec)	42	12	16
Phase Split	60%	17%	23%

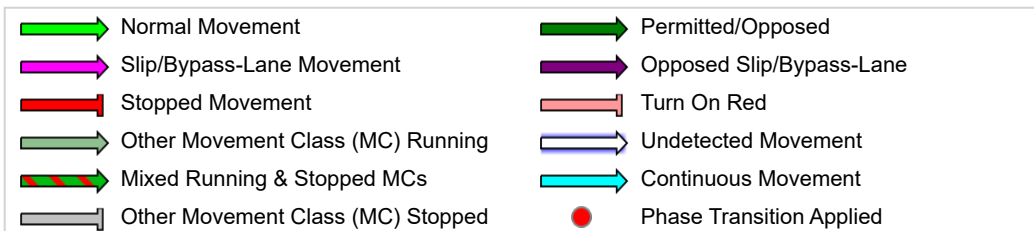
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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PHASING SUMMARY

Site: 12.0v [12.0 Edgewater Dr (East) / Ti Rakau Dr - Conversion (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 67 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Convert Function Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C

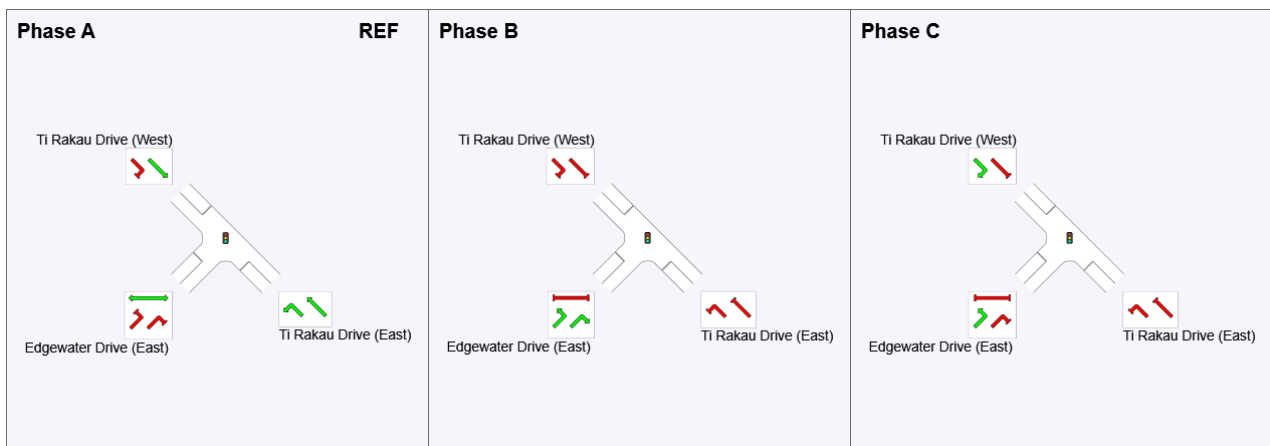
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	43	55
Green Time (sec)	37	6	6
Phase Time (sec)	43	12	12
Phase Split	64%	18%	18%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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PHASING SUMMARY

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

Scheme Design

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 160 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

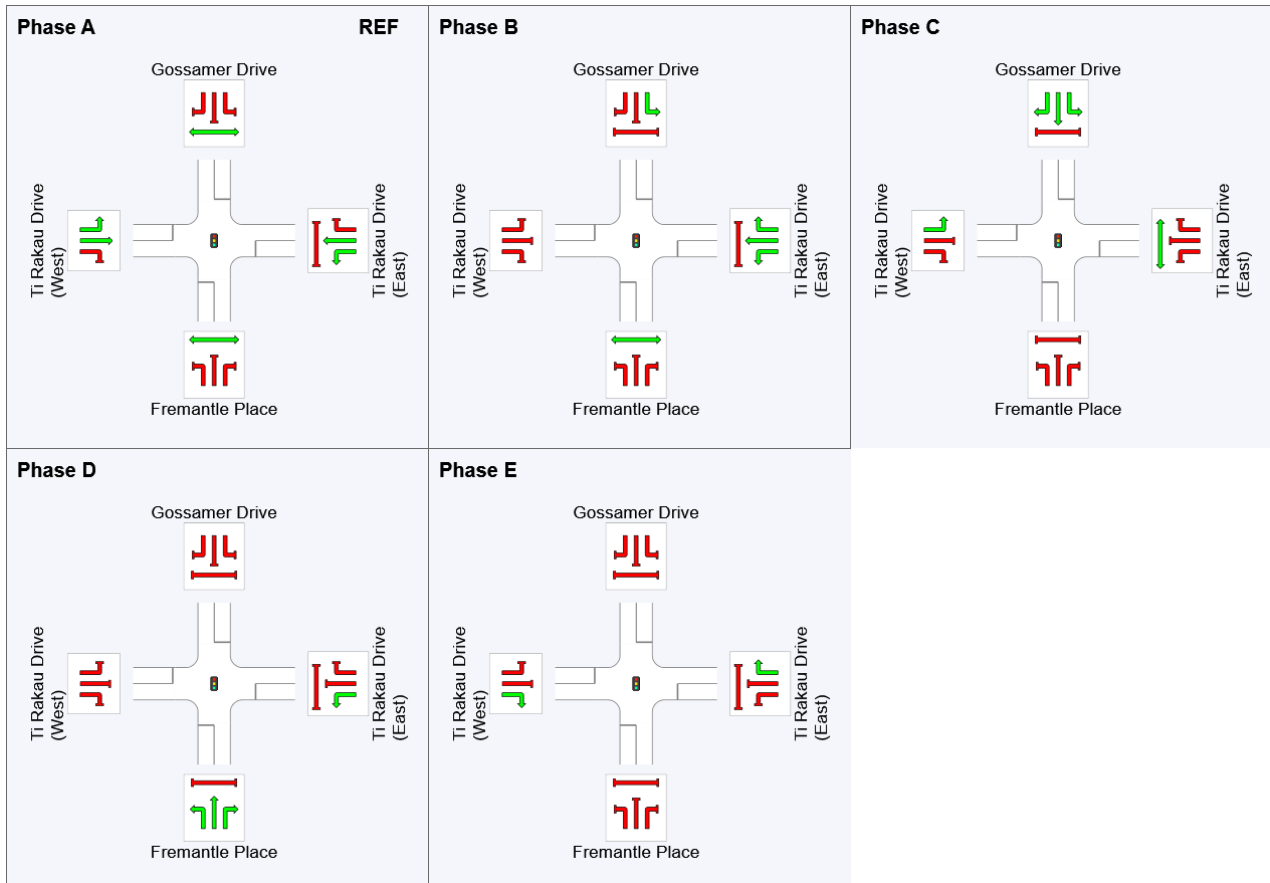
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

Phase	A	B	C	D	E
Phase Change Time (sec)	0	58	72	117	129
Green Time (sec)	52	8	39	6	25
Phase Time (sec)	58	14	45	12	31
Phase Split	36%	9%	28%	8%	19%

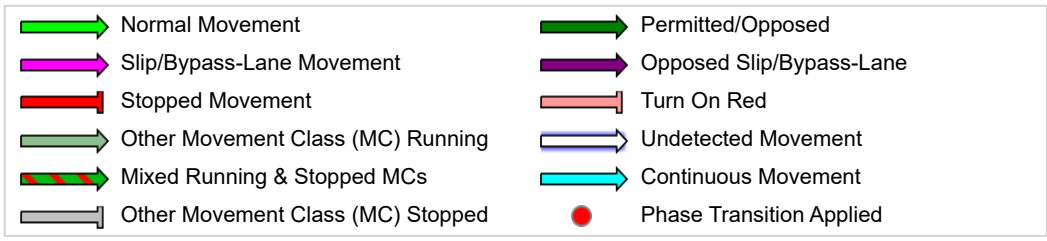
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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PHASING SUMMARY

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 77 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Map Extract Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

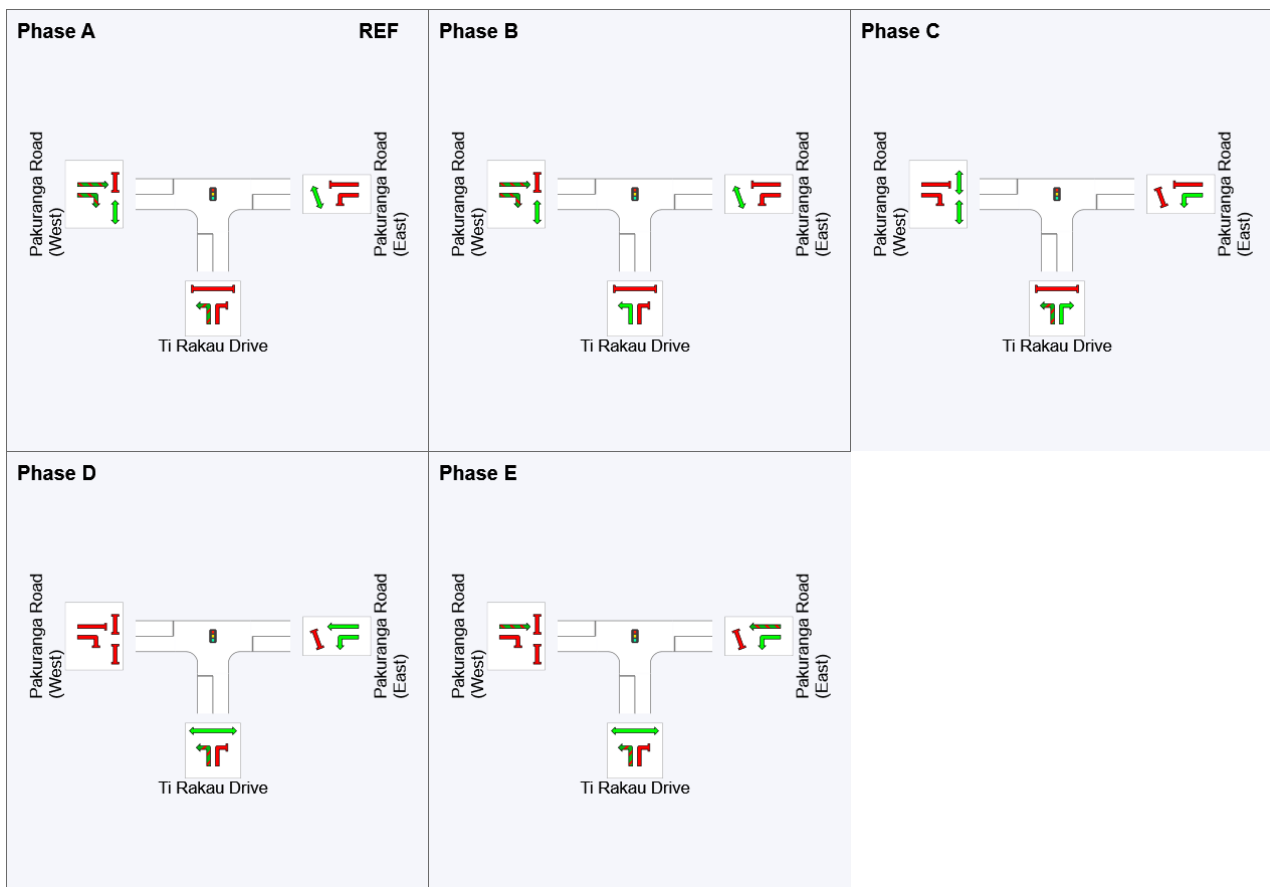
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

Phase	A	B	C	D	E
Phase Change Time (sec)	0	17	29	53	65
Green Time (sec)	11	6	18	6	6
Phase Time (sec)	17	12	24	12	12
Phase Split	22%	16%	31%	16%	16%













See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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TIME - DISTANCE DIAGRAM

Time – Distance Diagram for the Selected Route

Movement Class: Light Vehicles

➔ Route: R101 [Route1]

■ Network: N101 [PM (Network Folder: General)]

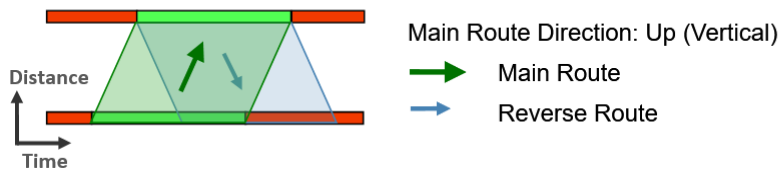
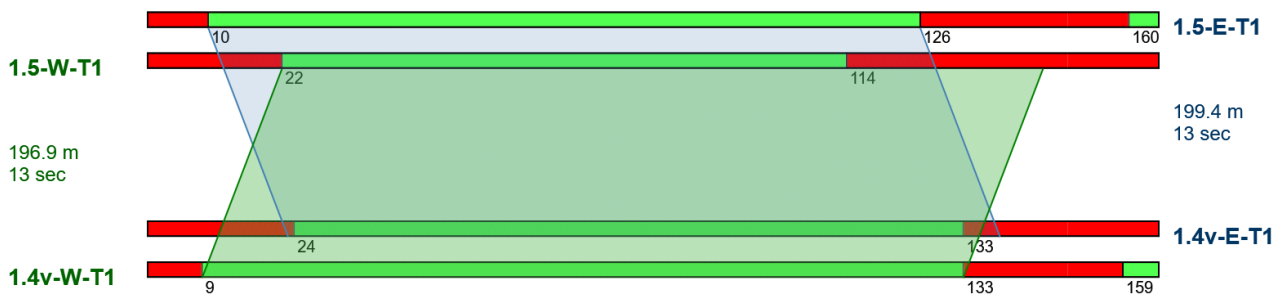
New Route

Network Category: (None)

Network Cycle Time = 150 seconds (Network User-Given Cycle Time)

Signal Offsets option used: User

Interactive Offsets



PHASING SUMMARY

Site: 1.4v [1.4 William Roberts/ Pakuranga Rd - PD - Conversion (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog

Phase Times specified by the user

Phase Sequence: Convert Function Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C

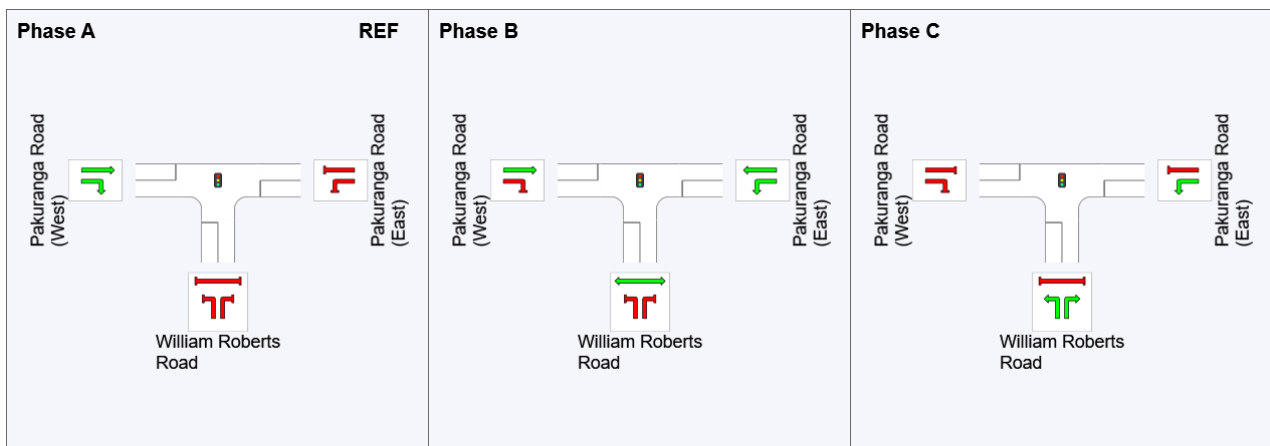
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	15	130
Green Time (sec)	9	109	14
Phase Time (sec)	15	115	20
Phase Split	10%	77%	13%

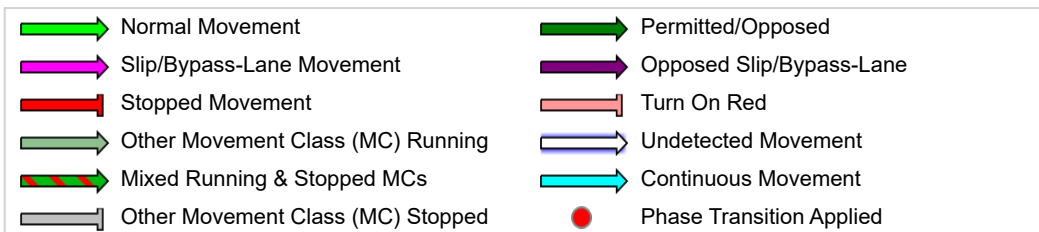
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



PHASING SUMMARY

Site: 1.5 [1.5 Saint Kentigern/ Pakuranga Rd - PD (Site Folder: Network: N101 [PM (Network General) Folder: General])

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Leading Right Turn

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D

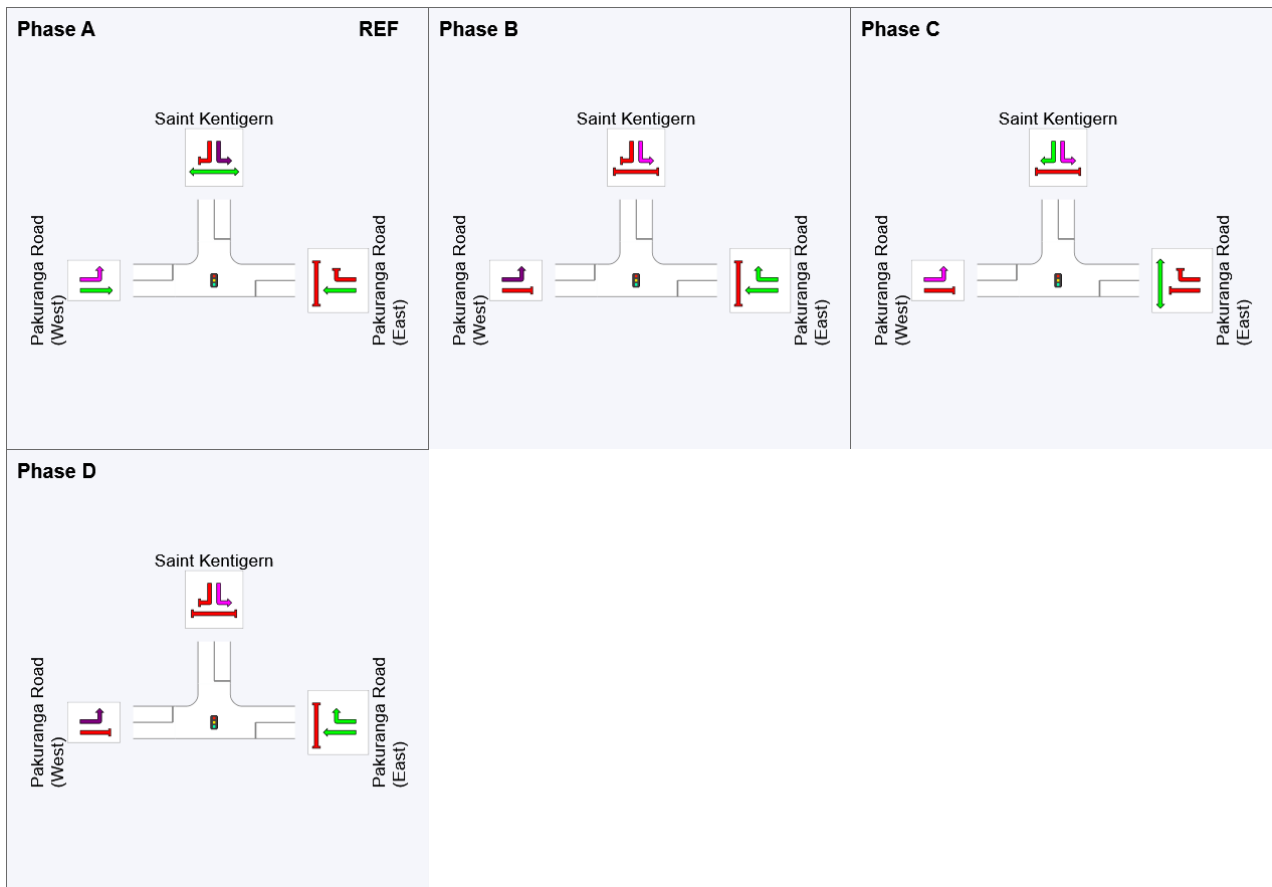
Output Phase Sequence: A, B, C, D

Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	13	111	123	1
Green Time (sec)	92	6	22	6
Phase Time (sec)	98	12	28	12
Phase Split	65%	8%	19%	8%











See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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PHASING SUMMARY

Site: 4.0 [4.0 Palm Ave / Aylesbury St - Import (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D

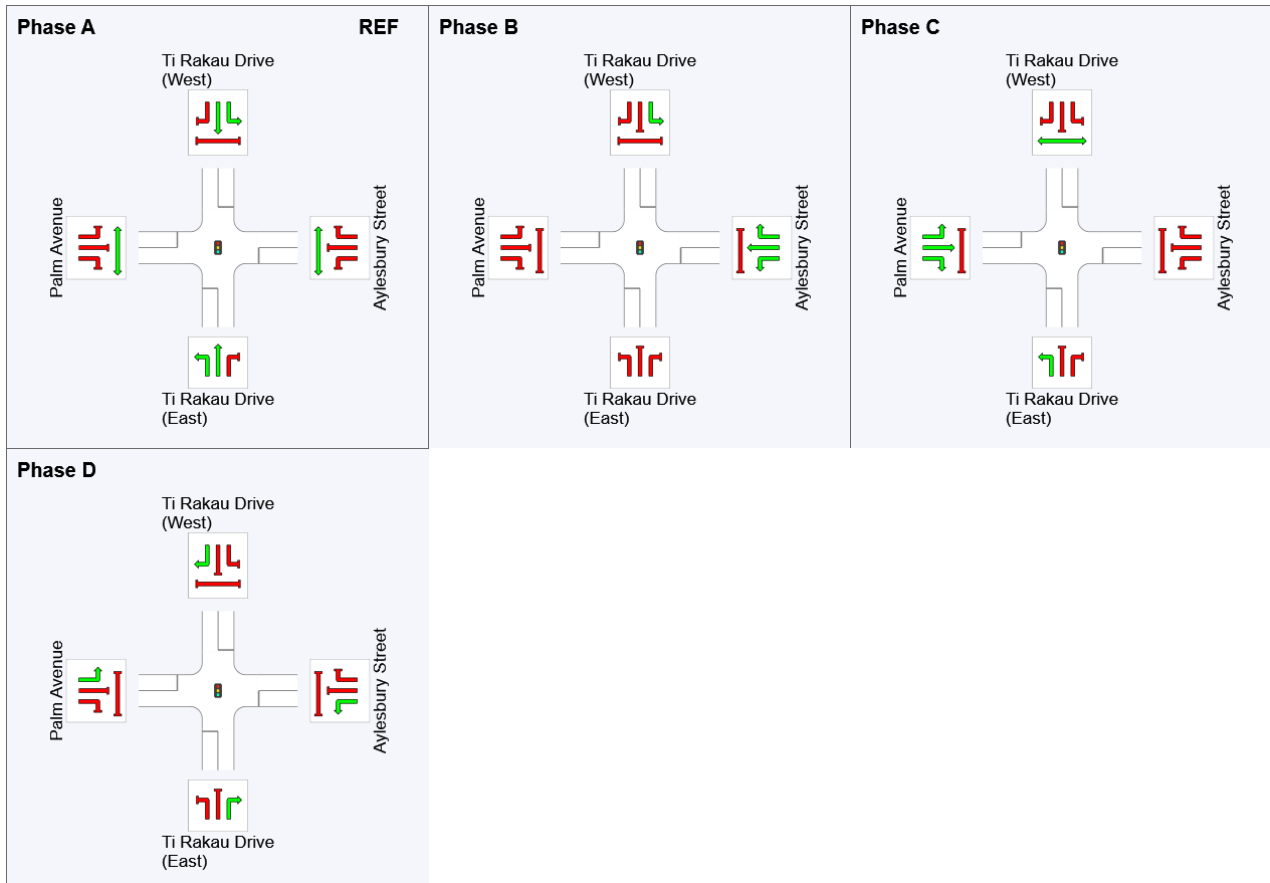
Output Phase Sequence: A, B, C, D

Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	0	103	115	133
Green Time (sec)	97	6	12	14
Phase Time (sec)	103	12	15	20
Phase Split	69%	8%	10%	13%













See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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PHASING SUMMARY

Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Map Extract Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C

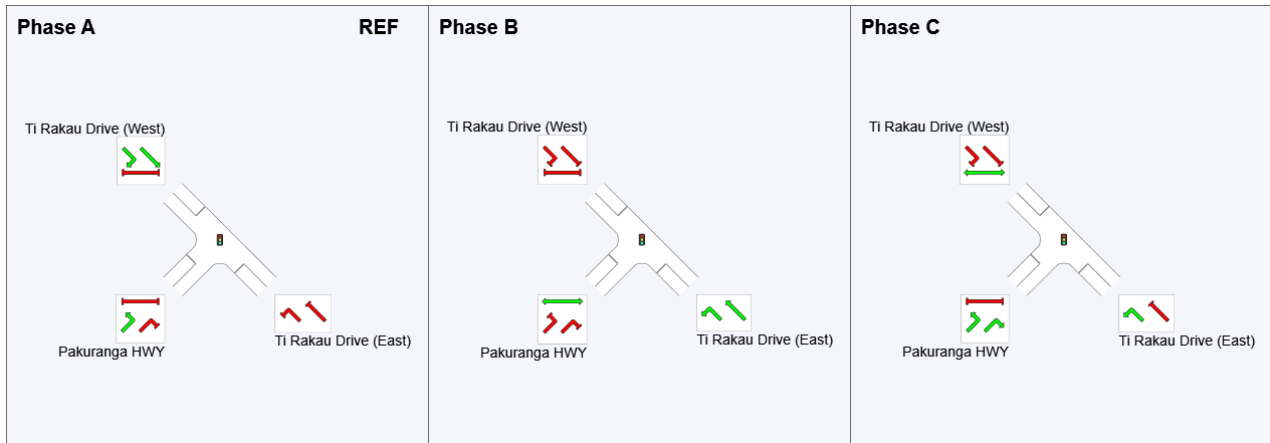
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	45	108
Green Time (sec)	39	57	36
Phase Time (sec)	45	63	42
Phase Split	30%	42%	28%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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PHASING SUMMARY

Site: 7.0 [7.0 Mattson Rd/ Ti Rakau Dr (Site Folder: General)] **Network:** N101 [PM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 69 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Map Extract Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C

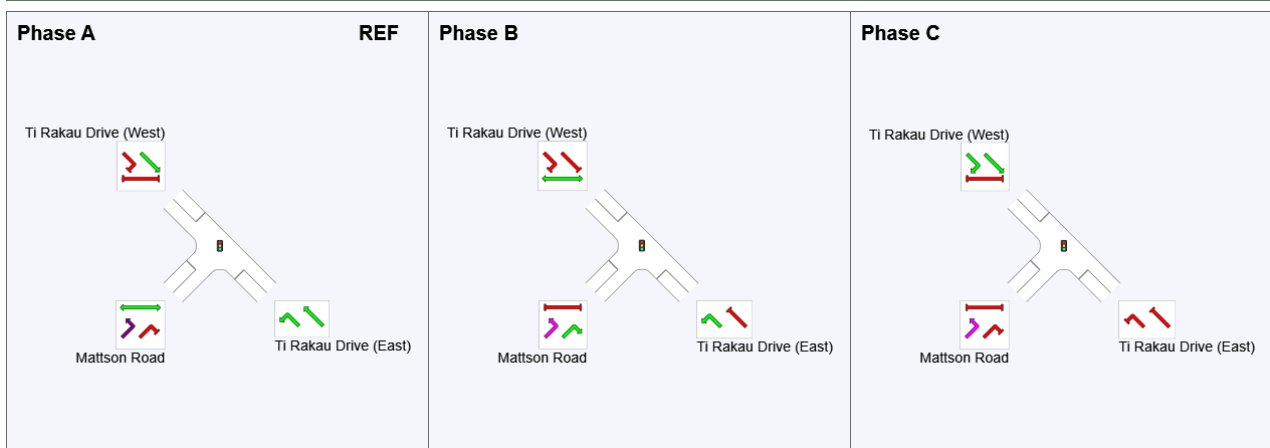
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	41	57
Green Time (sec)	35	10	6
Phase Time (sec)	41	16	12
Phase Split	59%	23%	17%

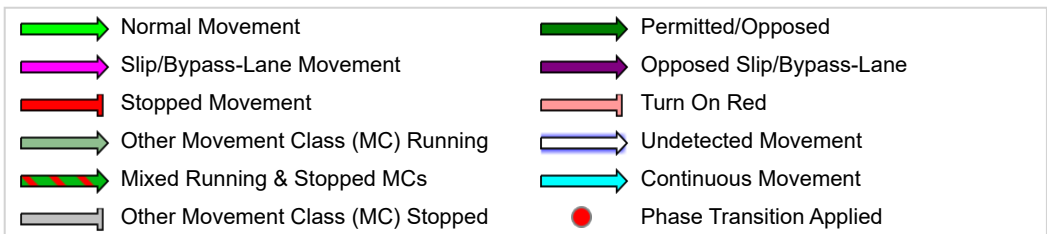
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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PHASING SUMMARY

Site: 10.0 [10.0 Edgewater Dr (West) / Chevis Pl (Site Folder: General)] Network: N101 [PM (Network Folder: General)]

New Site
 Site Category: (None)
 Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 64 seconds (Site Practical Cycle Time)

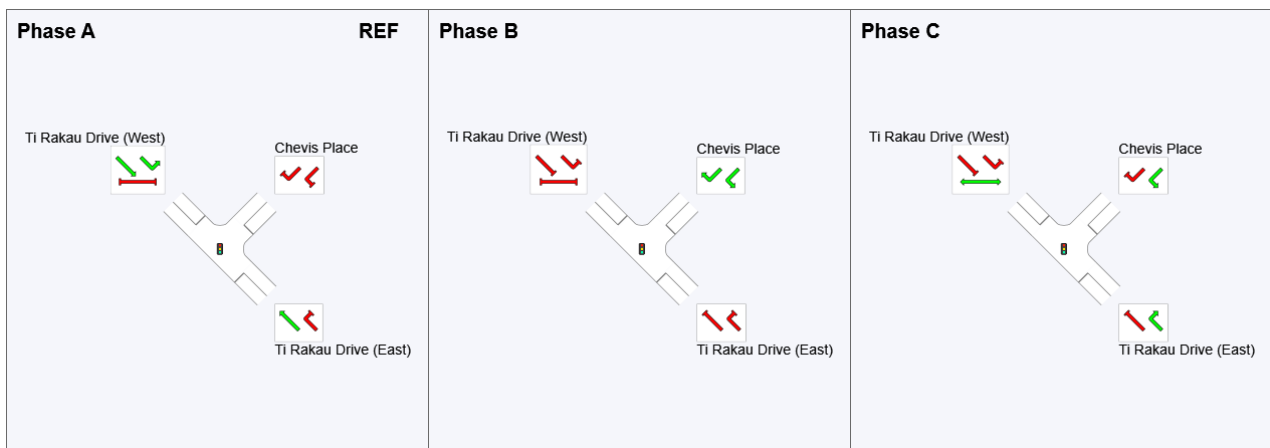
Timings based on settings in the Site Phasing & Timing dialog
 Phase Times determined by the program
 Downstream lane blockage effects included in determining phase times
 Phase Sequence: Variable Phasing
 Reference Phase: Phase A
 Input Phase Sequence: A, B, C
 Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	37	49
Green Time (sec)	31	6	9
Phase Time (sec)	37	12	15
Phase Split	58%	19%	23%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
 VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

PHASING SUMMARY

Site: 12.0v [12.0 Edgewater Dr (East) / Ti Rakau Dr - Conversion (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 67 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Convert Function Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C

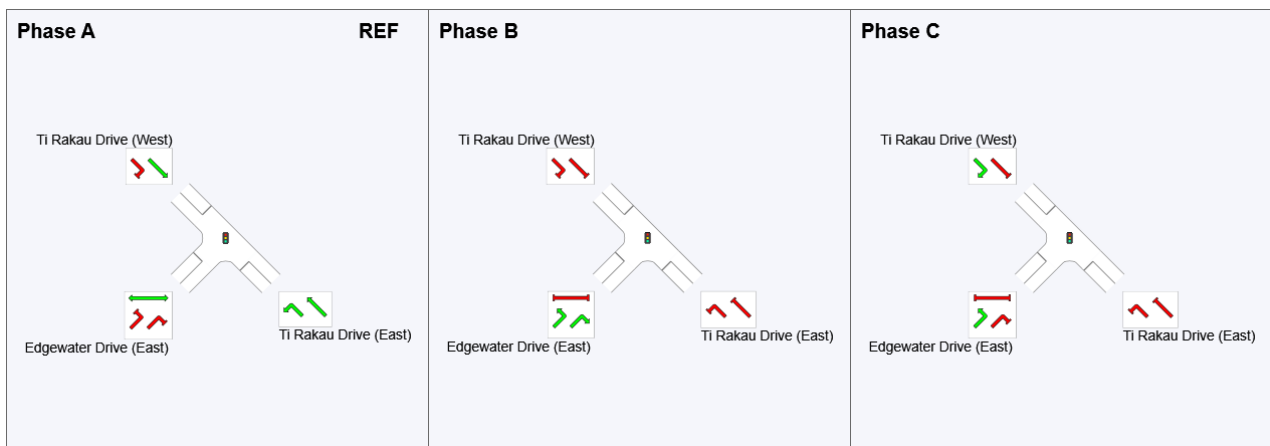
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	43	55
Green Time (sec)	37	6	6
Phase Time (sec)	43	12	12
Phase Split	64%	18%	18%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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PHASING SUMMARY

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

Scheme Design

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

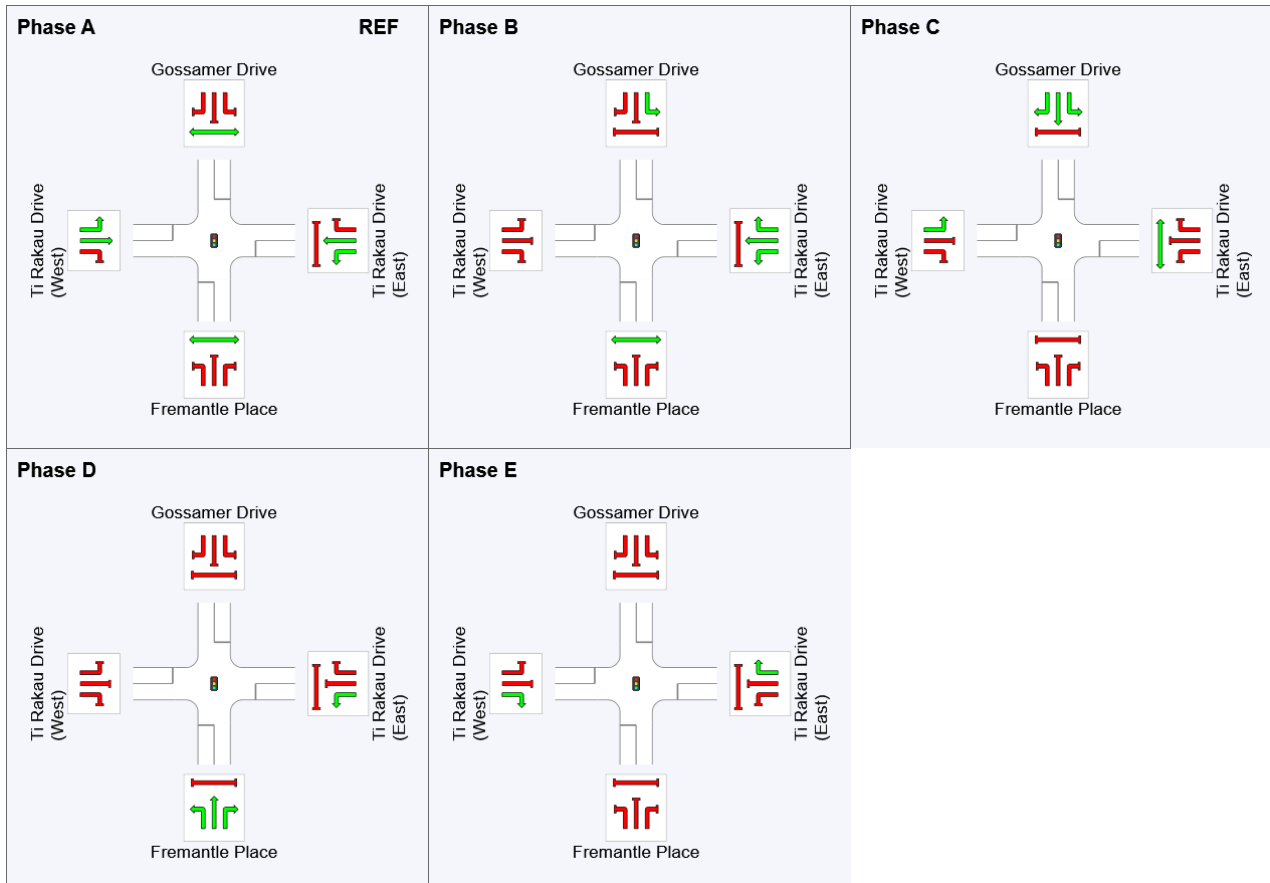
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

Phase	A	B	C	D	E
Phase Change Time (sec)	0	55	79	105	118
Green Time (sec)	49	18	20	8	26
Phase Time (sec)	55	24	25	14	32
Phase Split	37%	16%	17%	9%	21%











See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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Appendix N

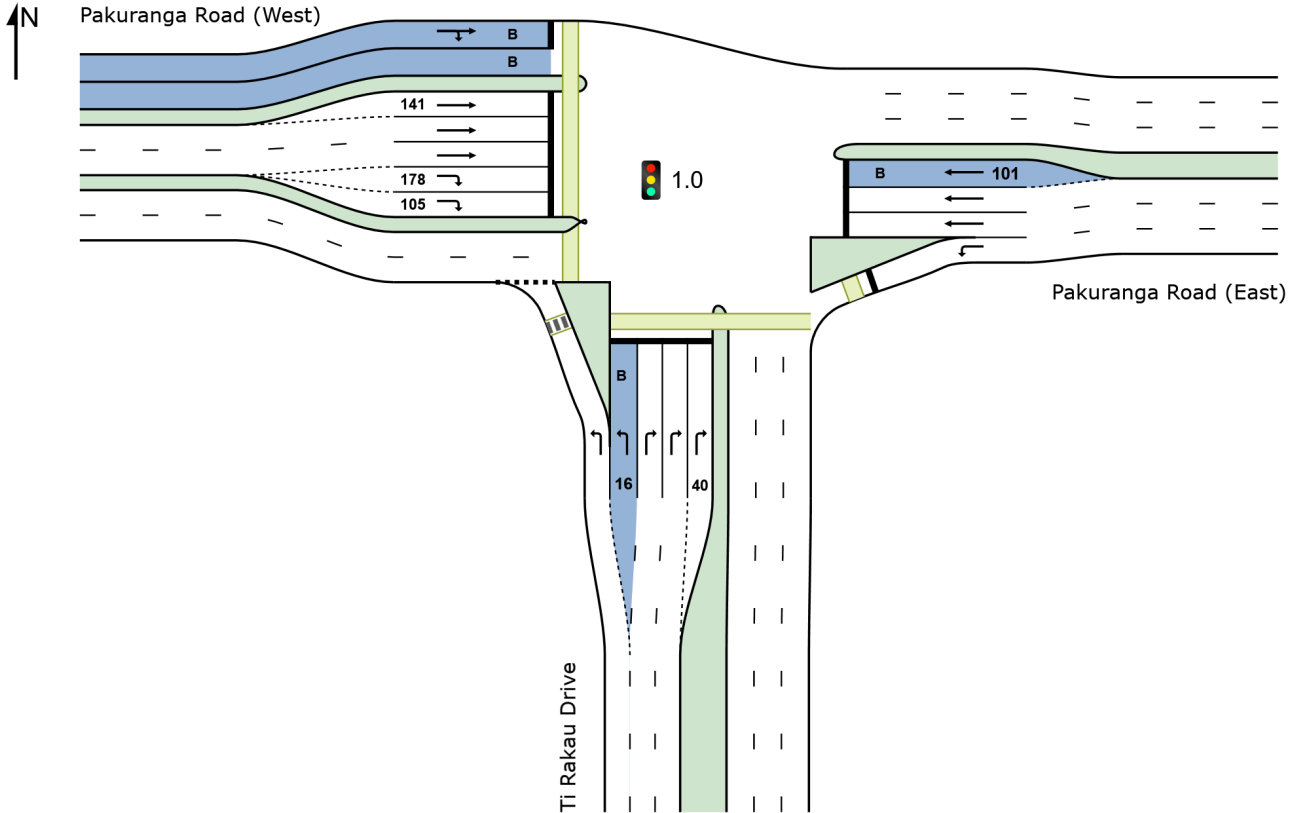
Construction Scenario 1.2 – Lane Performance Summaries

SITE LAYOUT

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 84 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV %	[Total veh/h	HV %						[Veh	Dist] m				
South: Ti Rakau Drive															
Lane 1	579	8.6	567	8.5	896 ¹	0.632	100	13.7	LOS B	13.8	103.8	Full	174	0.0	0.0
Lane 2 (B)	17	100.0	17	100.0	121	0.141	100	47.3	LOS D	0.7	9.1	Short	16	0.0	NA
Lane 3	191	4.0	187	4.0	342	0.546	100	38.7	LOS D	7.1	51.7	Full	174	0.0	0.0
Lane 4	191	4.0	187	4.0	342	0.546	100	38.7	LOS D	7.1	51.7	Full	174	0.0	0.0
Lane 5	191	4.0	187	4.0	342	0.546	100	38.7	LOS D	7.1	51.7	Short	40	0.0	NA
Approach	1168	7.7	1144 ^N ₁	7.7		0.632		26.4	LOS C	13.8	103.8				
East: Pakuranga Road (East)															
Lane 1	832	4.8	812	4.8	1127	0.720	100	16.9	LOS B	22.4	163.4	Full	113	0.0	38.7
Lane 2	626	6.1	611	6.0	689	0.887	100	38.5	LOS D	25.0 ^{N4}	184.4 ^{N4}	Full	113	0.0	50.0
Lane 3	626	6.1	611	6.0	689	0.887	100	38.5	LOS D	25.0 ^{N4}	184.4 ^{N4}	Full	113	0.0	50.0
Lane 4 (B)	25	100.0	25	100.0	85	0.293	100	45.6	LOS D	1.1	14.0	Short	101	0.0	NA
Approach	2109	6.7	2059 ^N ₁	6.7		0.887		30.0	LOS C	25.0	184.4				
West: Pakuranga Road (West)															
Lane 1 (B)	24	100.0	24	100.0	81	0.297	100	44.1	LOS D	1.0	12.7	Full	388	0.0	0.0
Lane 2	318	9.6	318	9.6	695	0.458	100	21.1	LOS C	9.8	74.6	Short	141	0.0	NA
Lane 3	318	9.6	318	9.6	695	0.458	100	21.1	LOS C	9.8	74.6	Full	388	0.0	0.0
Lane 4	318	9.6	318	9.6	695	0.458	100	21.1	LOS C	9.8	74.6	Full	388	0.0	0.0
Lane 5	126	7.9	126	7.9	146	0.865	100	56.2	LOS E	6.0	44.9	Short	178	0.0	NA
Lane 6	126	7.9	126	7.9	146	0.865	100	56.2	LOS E	6.0	44.9	Short	105	0.0	NA
Approach	1231	11.0	1231	11.0		0.865		28.7	LOS C	9.8	74.6				
Intersection	4508	8.1	4433 ^N ₁	8.3		0.887		28.8	LOS C	25.0	184.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)										
South: Ti Rakau Drive										
Mov. From S To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.	
	W	E								
Lane 1	567	-	567	8.5	896 ¹	0.632	100	NA	NA	
Lane 2	17	-	17	100.0	121	0.141	100	0.0	1	
Lane 3	-	187	187	4.0	342	0.546	100	NA	NA	

Lane 4	-	187	187	4.0	342	0.546	100	NA	NA
Lane 5	-	187	187	4.0	342	0.546	100	28.4	4
Approach	584	560	1144	7.7		0.632			
East: Pakuranga Road (East)									
Mov. From E To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	S	W							
Lane 1	812	-	812	4.8	1127	0.720	100	NA	NA
Lane 2	-	611	611	6.0	689	0.887	100	NA	NA
Lane 3	-	611	611	6.0	689	0.887	100	NA	NA
Lane 4	-	25	25	100.0	85	0.293	100	0.0	3
Approach	812	1247	2059	6.7		0.887			
West: Pakuranga Road (West)									
Mov. From W To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	E	S							
Lane 1	9	15	24	100.0	81	0.297	100	NA	NA
Lane 2	318	-	318	9.6	695	0.458	100	0.0	3
Lane 3	318	-	318	9.6	695	0.458	100	NA	NA
Lane 4	318	-	318	9.6	695	0.458	100	NA	NA
Lane 5	-	126	126	7.9	146	0.865	100	0.0	4
Lane 6	-	126	126	7.9	146	0.865	100	0.0	5
Approach	964	267	1231	11.0		0.865			
Total %HV Deg. Satn (v/c)									
Intersection	4433	8.3		0.887					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- 1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

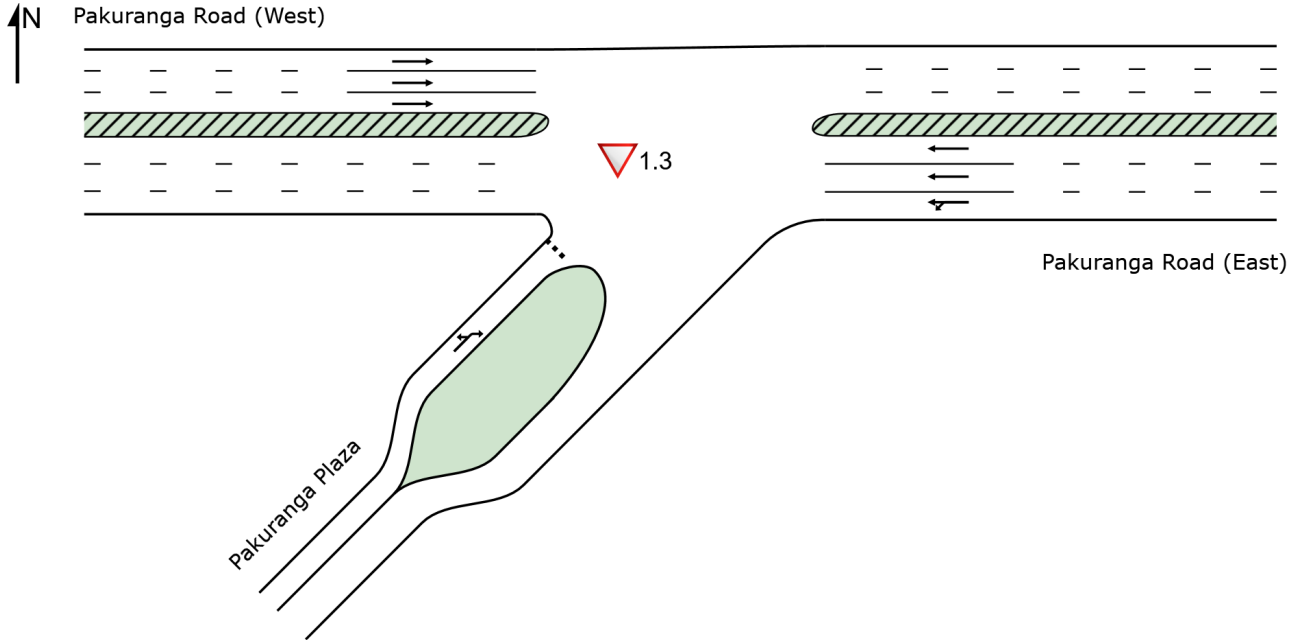
Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
South Exit: Ti Rakau Drive											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
Full Length Lane	2										Merge Analysis not applied.
Full Length Lane	3										Merge Analysis not applied.
East Exit: Pakuranga Road (East)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
Full Length Lane	2										Merge Analysis not applied.
Full Length Lane	3										Merge Analysis not applied.
West Exit: Pakuranga Road (West)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
Full Length Lane	2										Merge Analysis not applied.
Full Length Lane	3										Merge Analysis not applied.

SITE LAYOUT

▽ Site: 1.3 [1.3 Mall/ Pakuranga Rd - PD (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

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LANE SUMMARY

Site: 1.3 [1.3 Mall/ Pakuranga Rd - PD (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]						[Veh]	[Dist m]				
East: Pakuranga Road (East)															
Lane 1	719	8.5	719	8.5	1844	0.390	100	1.4	LOS A	0.0	0.0	Full	152	0.0	0.0
Lane 2	737	5.6	737	5.6	1892	0.390	100	0.0	LOS A	0.0	0.0	Full	152	0.0	0.0
Lane 3	737	5.6	737	5.6	1892	0.390	100	0.0	LOS A	0.0	0.0	Full	152	0.0	0.0
Approach	2193	6.5	2193	6.5		0.390		0.5	NA	0.0	0.0				
West: Pakuranga Road (West)															
Lane 1	509	8.1	505	8.1	1785	0.283	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Lane 2	509	8.1	505	8.1	1785	0.283	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Lane 3	506	8.1	503	8.1	1775	0.283	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Approach	1524	8.1	1514 ^{N1}	8.1		0.283		0.0	NA	0.0	0.0				
SouthWest: Pakuranga Plaza															
Lane 1	54	5.6	54	5.6	11	4.753	100	3585.9	LOS F	35.6	261.0	Full	196	-11.7 ^{N7}	14.2
Approach	54	5.6	54	5.6		4.753		3585.9	LOS F	35.6	261.0				
Intersection	3771	7.2	3761 ^{N1}	7.2		4.753		51.8	NA	35.6	261.0				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

N7 The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)										
East: Pakuranga Road (East)										
Mov. From E To Exit:	L1	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SW	W								
Lane 1	180	539	719	8.5	1844	0.390	100	NA	NA	
Lane 2	-	737	737	5.6	1892	0.390	100	NA	NA	
Lane 3	-	737	737	5.6	1892	0.390	100	NA	NA	
Approach	180	2013	2193	6.5		0.390				
West: Pakuranga Road (West)										
Mov. From W To Exit:	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.		
	E									
Lane 1	505	505	8.1	1785	0.283	100	NA	NA		
Lane 2	505	505	8.1	1785	0.283	100	NA	NA		

Lane 3	503	503	8.1		1775	0.283	100	NA	NA
Approach	1514	1514	8.1			0.283			
SouthWest: Pakuranga Plaza									
Mov. From SW To Exit:	L3 W	R1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.
Lane 1	29	25	54	5.6	11	4.753	100	NA	NA
Approach	29	25	54	5.6		4.753			
Total %HV Deg. Satn (v/c)									
Intersection	3761	7.2		4.753					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

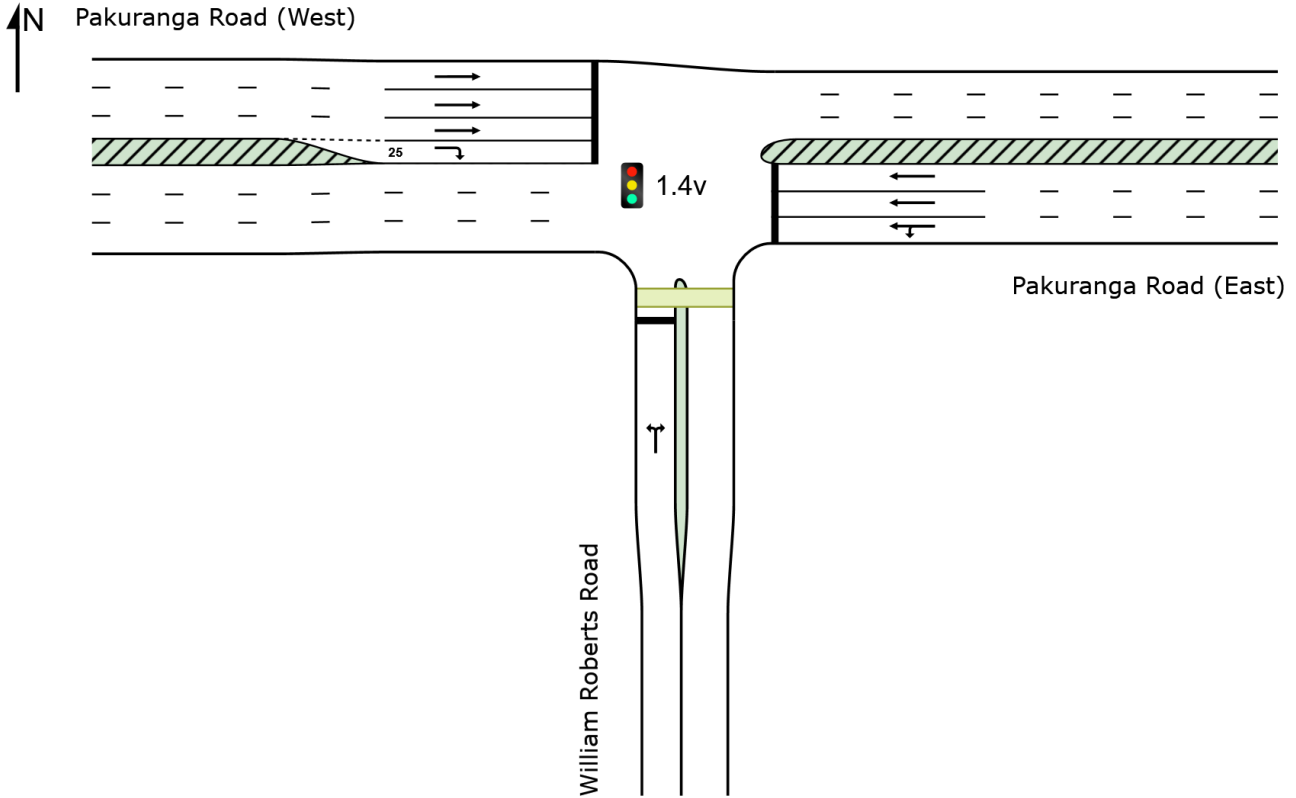
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: Pakuranga Road (East)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.
Full Length Lane	3											Merge Analysis not applied.
West Exit: Pakuranga Road (West)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.
Full Length Lane	3											Merge Analysis not applied.
SouthWest Exit: Pakuranga Plaza												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.

SITE LAYOUT

 Site: 1.4v [1.4 William Roberts/ Pakuranga Rd - PD - Conversion (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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LANE SUMMARY

Site: 1.4v [1.4 William Roberts/ Pakuranga Rd - PD - Conversion (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 61 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS [Total HV] veh/h %		ARRIVAL FLOWS [Total HV] veh/h %		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh Dist] m		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: William Roberts Road															
Lane 1	287	8.7	287	8.7	329	0.871	100	40.0	LOS D	10.3	77.1	Full	244	-0.7 ^{N7}	0.0
Approach	287	8.7	287	8.7		0.871		40.0	LOS D	10.3	77.1				
East: Pakuranga Road (East)															
Lane 1	699	6.0	699	6.0	790	0.885	100	29.7	LOS C	25.3	185.9	Full	184	0.0	5.9
Lane 2	688	6.2	688	6.2	778	0.885	100	28.9	LOS C	24.9	183.3	Full	184	0.0	4.6
Lane 3	696	6.2	696	6.2	786	0.885	100	28.8	LOS C	25.1	184.9	Full	184	0.0	5.4
Approach	2083	6.1	2083	6.1		0.885		29.1	LOS C	25.3	185.9				
West: Pakuranga Road (West)															
Lane 1	558	8.1	551	8.1	1142	0.483	100	6.7	LOS A	8.9	66.5	Full	152	0.0	0.0
Lane 2	527	8.1	520	8.1	1077	0.483	100	6.7	LOS A	8.4	62.9	Full	152	-5.7 ^{N3}	0.0
Lane 3	466	8.1	460	8.1	953 ¹	0.483	100	6.5	LOS A	7.2	53.7	Full	152	-5.7 ^{N3}	0.0
Lane 4	54	13.0	53	13.0	160	0.333	100	35.8	LOS D	1.6	12.5	Short	25	0.0	NA
Approach	1605	8.2	1585 ^{N1}	8.3		0.483		7.6	LOS A	8.9	66.5				
Intersection	3975	7.2	3955 ^{N1}	7.2		0.885		21.3	LOS C	25.3	185.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

^{N7} The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)										
South: William Roberts Road										
Mov. From S To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	W	E								
Lane 1	253	34	287	8.7	329	0.871	100	NA	NA	
Approach	253	34	287	8.7		0.871				
East: Pakuranga Road (East)										
Mov. From E To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	S	W								
Lane 1	143	556	699	6.0	790	0.885	100	NA	NA	
Lane 2	-	688	688	6.2	778	0.885	100	NA	NA	

Lane 3	-	696	696	6.2	786	0.885	100	NA	NA
Approach	143	1940	2083	6.1		0.885			
West: Pakuranga Road (West)									
Mov. From W To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	E	S							
Lane 1	551	-	551	8.1	1142	0.483	100	NA	NA
Lane 2	520	-	520	8.1	1077	0.483	100	NA	NA
Lane 3	460	-	460	8.1	953 ¹	0.483	100	NA	NA
Lane 4	-	53	53	13.0	160	0.333	100	0.0	3
Approach	1532	53	1585	8.3		0.483			
Total %HV Deg. Satn (v/c)									
Intersection	3955	7.2		0.885					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- ¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate % veh/h	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: William Roberts Road												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
East Exit: Pakuranga Road (East)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.
Full Length Lane	3											Merge Analysis not applied.
West Exit: Pakuranga Road (West)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.
Full Length Lane	3											Merge Analysis not applied.

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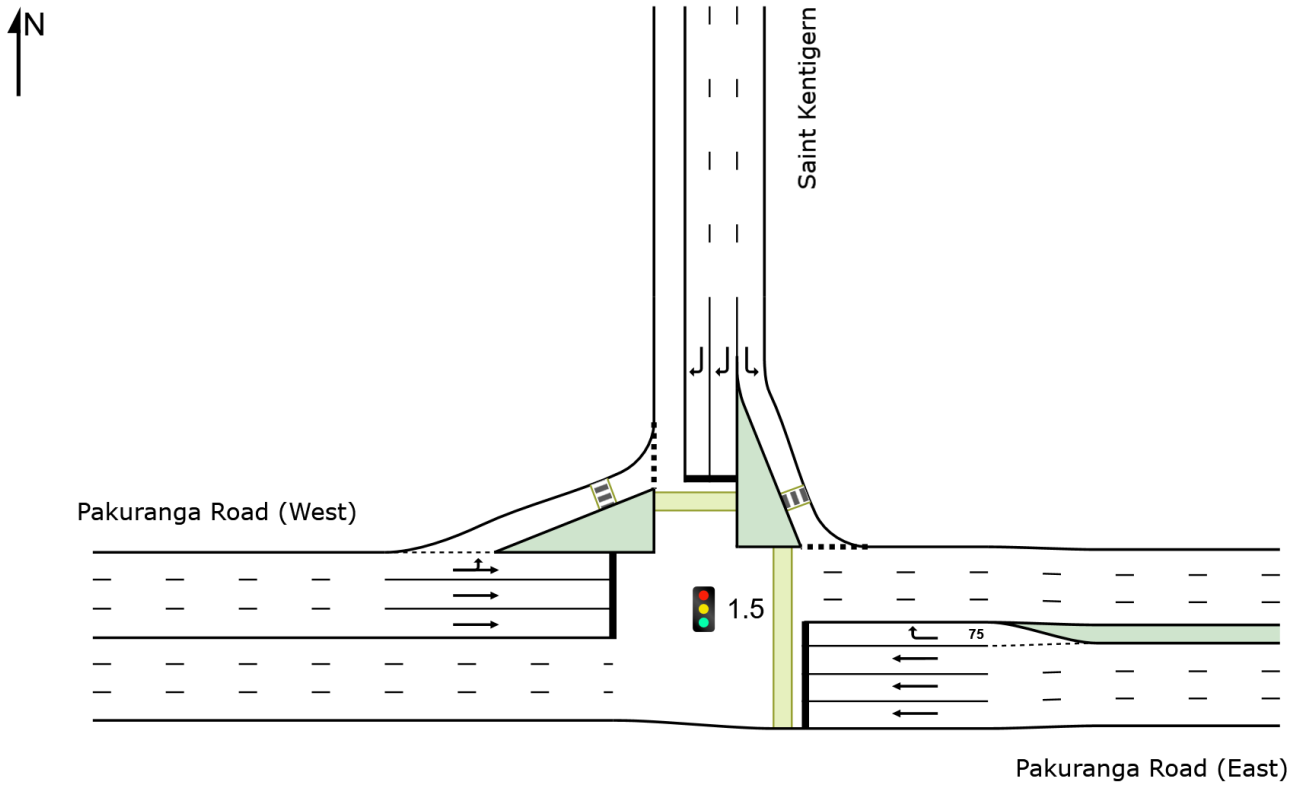
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SITE LAYOUT

Site: 1.5 [1.5 Saint Kentigern/ Pakuranga Rd - PD (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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LANE SUMMARY

Site: 1.5 [1.5 Saint Kentigern/ Pakuranga Rd - PD (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 88 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
	veh/h	%	veh/h	%	veh/h	v/c	%	sec		Dist]	m		m	%	%
East: Pakuranga Road (East)															
Lane 1	685	6.3	685	6.3	1065	0.644	100	11.6	LOS B	18.7	138.0	Full	87	-5.9 ^{N3}	47.3
Lane 2	695	6.3	695	6.3	1079	0.644	100	11.6	LOS B	18.9	139.8	Full	87	-4.6 ^{N3}	48.5
Lane 3	672	6.3	672	6.3	1045	0.644	100	11.4	LOS B	18.0	132.8	Full	87	-5.4 ^{N3}	43.7
Lane 4	72	2.8	72	2.8	239	0.301	100	26.0	LOS C	1.7	12.0	Short	75	0.0	NA
Approach	2124	6.2	2124	6.2		0.644		12.0	LOS B	18.9	139.8				
North: Saint Kentigern															
Lane 1	13	0.0	13	0.0	938	0.014	100	5.8	LOS A	0.2	1.3	Full	96	0.0	0.0
Lane 2	20	10.0	20	10.0	407	0.050	100	27.1	LOS C	0.7	5.0	Full	96	-4.6 ^{N3}	0.0
Lane 3	20	10.0	20	10.0	397	0.050	100	27.1	LOS C	0.6	4.9	Full	96	-5.4 ^{N3}	0.0
Approach	53	7.5	53	7.5		0.050		21.9	LOS C	0.7	5.0				
West: Pakuranga Road (West)															
Lane 1	505	7.2	499	7.3	586	0.853	100	33.1	LOS C	21.0	156.0	Full	184	0.0	0.0
Lane 2	541	8.4	535	8.4	627	0.853	100	36.8	LOS D	24.7	185.3	Full	184	0.0	5.7
Lane 3	541	8.4	535	8.4	627	0.853	100	36.8	LOS D	24.7	185.3	Full	184	0.0	5.7
Approach	1587	8.0	1569 ^{N1}	8.1		0.853		35.6	LOS D	24.7	185.3				
Intersection	3764	7.0	3746 ^{N1}	7.0		0.853		22.0	LOS C	24.7	185.3				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

Approach Lane Flows (veh/h)										
East: Pakuranga Road (East)										
Mov.	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane
From E					veh/h	v/c	%	%		No.
To Exit:	W	N								
Lane 1	685	-	685	6.3	1065	0.644	100	NA	NA	NA
Lane 2	695	-	695	6.3	1079	0.644	100	NA	NA	NA
Lane 3	672	-	672	6.3	1045	0.644	100	NA	NA	NA
Lane 4	-	72	72	2.8	239	0.301	100	0.0	3	3
Approach	2052	72	2124	6.2		0.644				
North: Saint Kentigern										
Mov.	L2	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane
From N					veh/h	v/c	%	%		No.
To Exit:	E	W								
Lane 1	13	-	13	0.0	938	0.014	100	NA	NA	NA

Lane 2	-	20	20	10.0	407	0.050	100	NA	NA
Lane 3	-	20	20	10.0	397	0.050	100	NA	NA
Approach	13	40	53	7.5		0.050			
West: Pakuranga Road (West)									
Mov. From W To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.
	N	E							
Lane 1	127	372	499	7.3	586	0.853	100	NA	NA
Lane 2	-	535	535	8.4	627	0.853	100	NA	NA
Lane 3	-	535	535	8.4	627	0.853	100	NA	NA
Approach	127	1441	1569	8.1		0.853			
Total %HV Deg. Satn (v/c)									
Intersection	3746	7.0		0.853					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

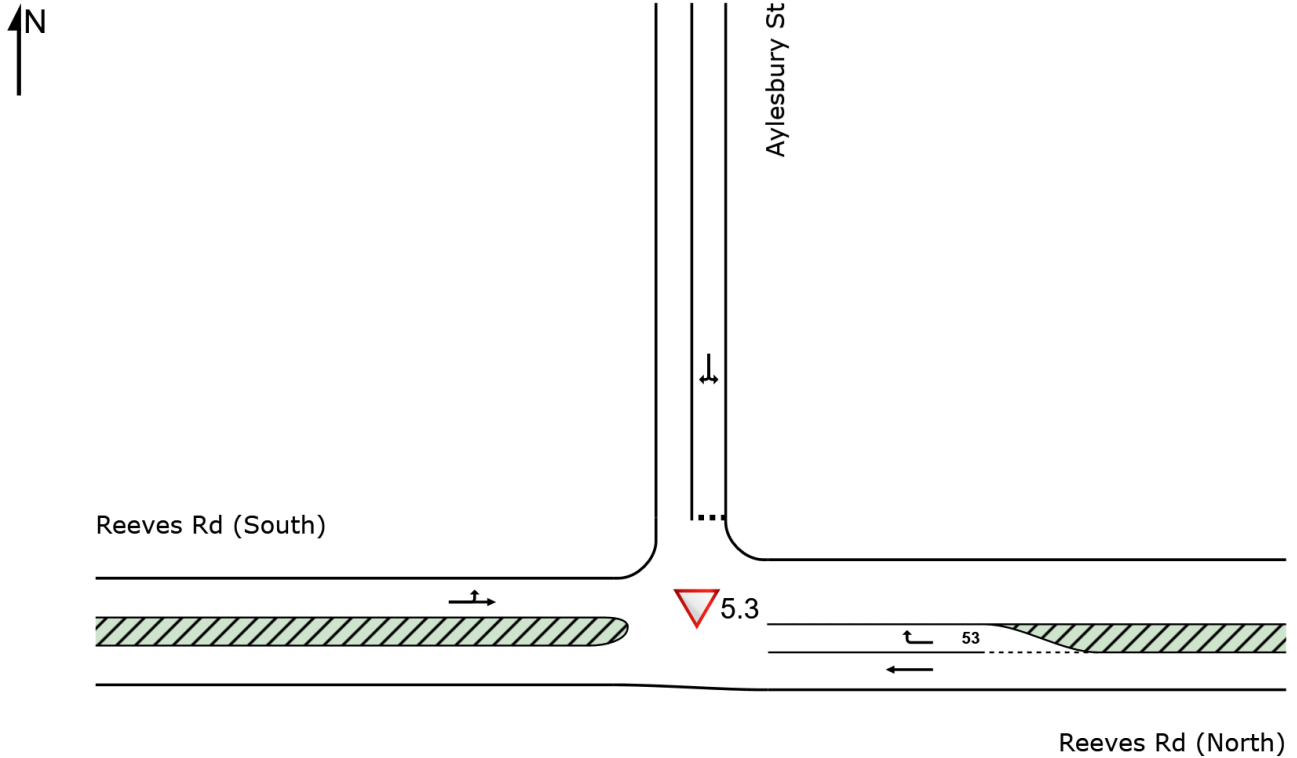
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
East Exit: Pakuranga Road (East)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											
North Exit: Saint Kentigern												
Merge Type: Not Applied												
Full Length Lane	1											
West Exit: Pakuranga Road (West)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											

SITE LAYOUT

▽ Site: 5.3 [5.3 Reeves Rd/ Aylesbury St (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

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Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.2\CS 1.2 AM-V1.sip9

LANE SUMMARY

Site: 5.3 [5.3 Reeves Rd/ Aylesbury St (Site Folder: General)]

Network: N101 [AM
(Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
	veh/h	%	veh/h	%											
East: Reeves Rd (North)															
Lane 1	33	9.1	33	9.1	1894	0.017	100	0.0	LOS A	0.0	0.0	Full	60	0.0	0.0
Lane 2	16	6.3	16	6.3	1680	0.010	100	4.6	LOS A	0.0	0.3	Short	53	0.0	NA
Approach	49	8.2	49	8.2		0.017		1.5	NA	0.0	0.3				
North: Aylesbury St															
Lane 1	22	9.1	22	9.1	1243	0.018	100	0.4	LOS A	0.1	0.5	Full	193	0.0	0.0
Approach	22	9.1	22	9.1		0.018		0.4	LOS A	0.1	0.5				
West: Reeves Rd (South)															
Lane 1	42	9.5	42	9.5	1872	0.022	100	2.2	LOS A	0.0	0.0	Full	175	0.0	0.0
Approach	42	9.5	42	9.5		0.022		2.2	NA	0.0	0.0				
Intersection	113	8.8	113	8.9		0.022		1.6	NA	0.1	0.5				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Approach Lane Flows (veh/h)										
East: Reeves Rd (North)										
Mov.	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Prob. Ov.	Ov. Lane No.
From E To Exit:	W	N			veh/h	v/c	%	%		
Lane 1	33	-	33	9.1	1894	0.017	100	NA	NA	
Lane 2	-	16	16	6.3	1680	0.010	100	0.0	1	
Approach	33	16	49	8.2		0.017				
North: Aylesbury St										
Mov.	L2	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Prob. Ov.	Ov. Lane No.
From N To Exit:	E	W			veh/h	v/c	%	%		
Lane 1	11	11	22	9.1	1243	0.018	100	NA	NA	
Approach	11	11	22	9.1		0.018				
West: Reeves Rd (South)										
Mov.	L2	T1	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Prob. Ov.	Ov. Lane No.
From W To Exit:	N	E			veh/h	v/c	%	%		
Lane 1	20	22	42	9.5	1872	0.022	100	NA	NA	
Approach	20	22	42	9.5		0.022				

	Total	%HV	Deg.Satn (v/c)
Intersection	113	8.9	0.022

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: Reeves Rd (North) Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								
North Exit: Aylesbury St Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								
West Exit: Reeves Rd (South) Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								

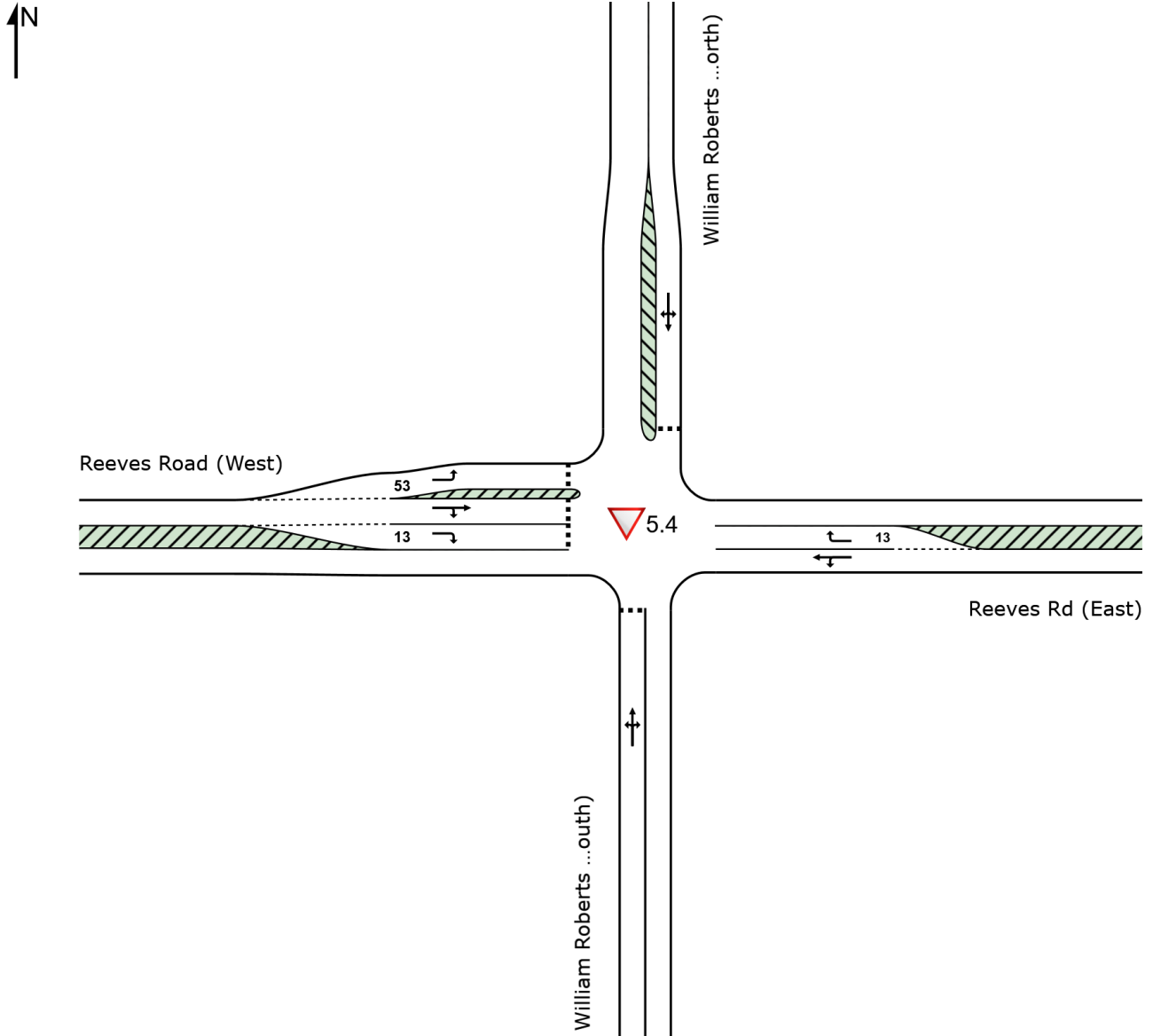
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SITE LAYOUT

▽ Site: 5.4 [5.4 Reeves Rd / William Roberts Rd - Import (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

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LANE SUMMARY

Site: 5.4 [5.4 Reeves Rd / William Roberts Rd - Import (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS [Total HV]		ARRIVAL FLOWS [Total HV]		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh Dist]		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			m		m	%	%
South: William Roberts Rd (South)															
Lane 1	214	8.9	213	8.9	851	0.251	100	4.2	LOS A	1.0	7.3	Full	243	0.0	0.0
Approach	214	8.9	213 ^{N1}	8.9		0.251		4.2	LOS A	1.0	7.3				
East: Reeves Rd (East)															
Lane 1	142	7.2	142	7.2	1770	0.080	100	3.3	LOS A	0.0	0.0	Full	266	0.0	0.0
Lane 2	231	8.7	231	8.7	1722	0.134	100	4.7	LOS A	0.0	0.0	Short	13	0.0	NA
Approach	373	8.1	373	8.1		0.134		4.2	NA	0.0	0.0				
North: William Roberts Rd (North)															
Lane 1	107	4.7	106	4.7	1057	0.100	100	5.4	LOS A	0.3	2.3	Full	244	0.0	0.0
Approach	107	4.7	106 ^{N1}	4.7		0.100		5.4	LOS A	0.3	2.3				
West: Reeves Road (West)															
Lane 1	23	9.1	23	9.1	1174	0.020	100	5.4	LOS A	0.1	0.6	Short	53	0.0	NA
Lane 2	23	9.1	23	9.1	1088	0.021	100	4.1	LOS A	0.1	0.6	Full	60	0.0	0.0
Lane 3	12	9.1	12	9.1	781	0.015	70 ⁵	6.2	LOS A	0.0	0.4	Short	13	0.0	NA
Approach	58	9.1	58	9.1		0.021		5.0	LOS A	0.1	0.6				
Intersection	751	7.9	751	7.9		0.251		4.4	NA	1.0	7.3				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

⁵ Lane under-utilisation found by the program

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)											
South: William Roberts Rd (South)											
Mov. From S To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Ov. %	Ov. Lane No.
Lane 1	11	60	143	213	8.9	851	0.251	100	NA	NA	
Approach	11	60	143	213	8.9		0.251				
East: Reeves Rd (East)											
Mov. From E To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Ov. %	Ov. Lane No.
Lane 1	96	46	-	142	7.2	1770	0.080	100	NA	NA	
Lane 2	-	-	231	231	8.7	1722	0.134	100	0.0	1	

Approach	96	46	231	373	8.1		0.134				
North: William Roberts Rd (North)											
Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	21	75	10	106	4.7	1057	0.100	100	NA	NA	
Approach	21	75	10	106	4.7		0.100				
West: Reeves Road (West)											
Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	23	-	-	23	9.1	1174	0.020	100	0.0	2	
Lane 2	-	23	-	23	9.1	1088	0.021	100	NA	NA	
Lane 3	-	-	12	12	9.1	781	0.015	70 ⁵	0.0	2	
Approach	23	23	12	58	9.1		0.021				
Total %HV Deg. Satn (v/c)											
Intersection	751	7.9		0.251							

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

5 Lane under-utilisation found by the program

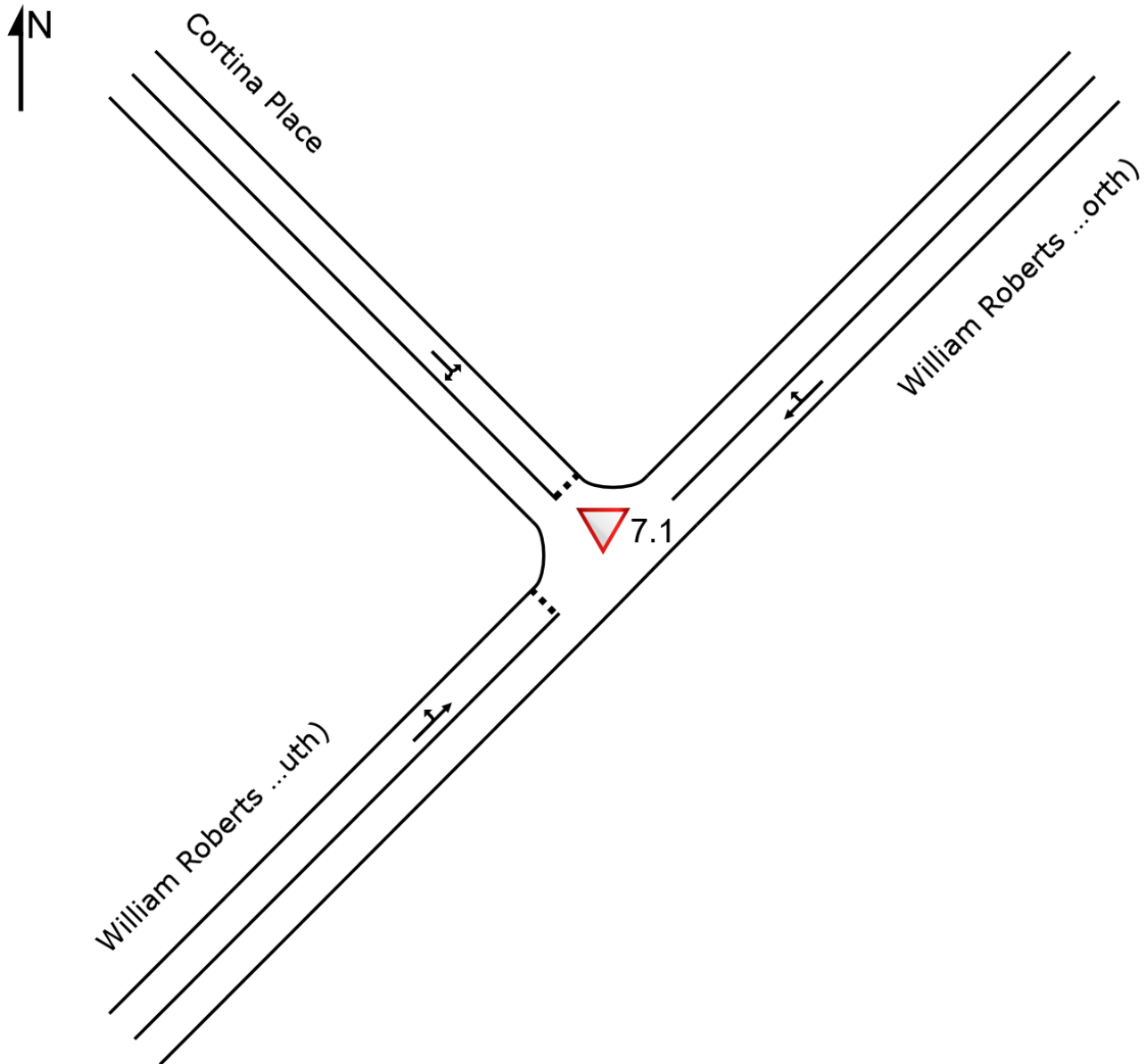
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate % veh/h	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: William Roberts Rd (South) Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
East Exit: Reeves Rd (East) Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
North Exit: William Roberts Rd (North) Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
West Exit: Reeves Road (West) Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.

SITE LAYOUT

▽ Site: 7.1 [7.1 William Roberts Rd / Cortina PI - Import (Site Folder: General)]

Scheme Design
Site Category: (None)
Give-Way (Two-Way)

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LANE SUMMARY

Site: 7.1 [7.1 William Roberts Rd / Cortina PI - Import (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

Scheme Design
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS [Total HV] veh/h %		ARRIVAL FLOWS [Total HV] veh/h %		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh Dist] m		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
NorthEast: William Roberts Road (North)															
Lane 1	306	7.9	306	7.9	1834	0.167	100	0.5	LOS A	0.0	0.0	Full	243	0.0	0.0
Approach	306	7.9	306	7.9		0.167		0.5	NA	0.0	0.0				
NorthWest: Cortina Place															
Lane 1	32	6.5	32	6.5	990	0.032	100	4.4	LOS A	0.1	0.8	Full	140	0.0	0.0
Approach	32	6.5	32	6.5		0.032		4.4	LOS A	0.1	0.8				
SouthWest: William Roberts Road (South)															
Lane 1	215	8.8	214	8.8	1258	0.170	100	4.0	LOS A	0.7	5.1	Full	110	0.0	0.0
Approach	215	8.8	214 ^{N1}	8.8		0.170		4.0	LOS A	0.7	5.1				
Intersection	553	8.2	552 ^{N1}	8.2		0.170		2.1	NA	0.7	5.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab). Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)										
NorthEast: William Roberts Road (North)										
Mov. From NE To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SW	NW								
Lane 1	269	37	306	7.9	1834	0.167	100	NA	NA	
Approach	269	37	306	7.9		0.167				
NorthWest: Cortina Place										
Mov. From NW To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	NE	SW								
Lane 1	20	12	32	6.5	990	0.032	100	NA	NA	
Approach	20	12	32	6.5		0.032				
SouthWest: William Roberts Road (South)										
Mov. From SW To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	NW	NE								
Lane 1	25	189	214	8.8	1258	0.170	100	NA	NA	
Approach	25	189	214	8.8		0.170				
Total %HV Deg. Satn (v/c)										

Intersection	552	8.2	0.170
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Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
NorthEast Exit: William Roberts Road (North) Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								
NorthWest Exit: Cortina Place Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								
SouthWest Exit: William Roberts Road (South) Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								

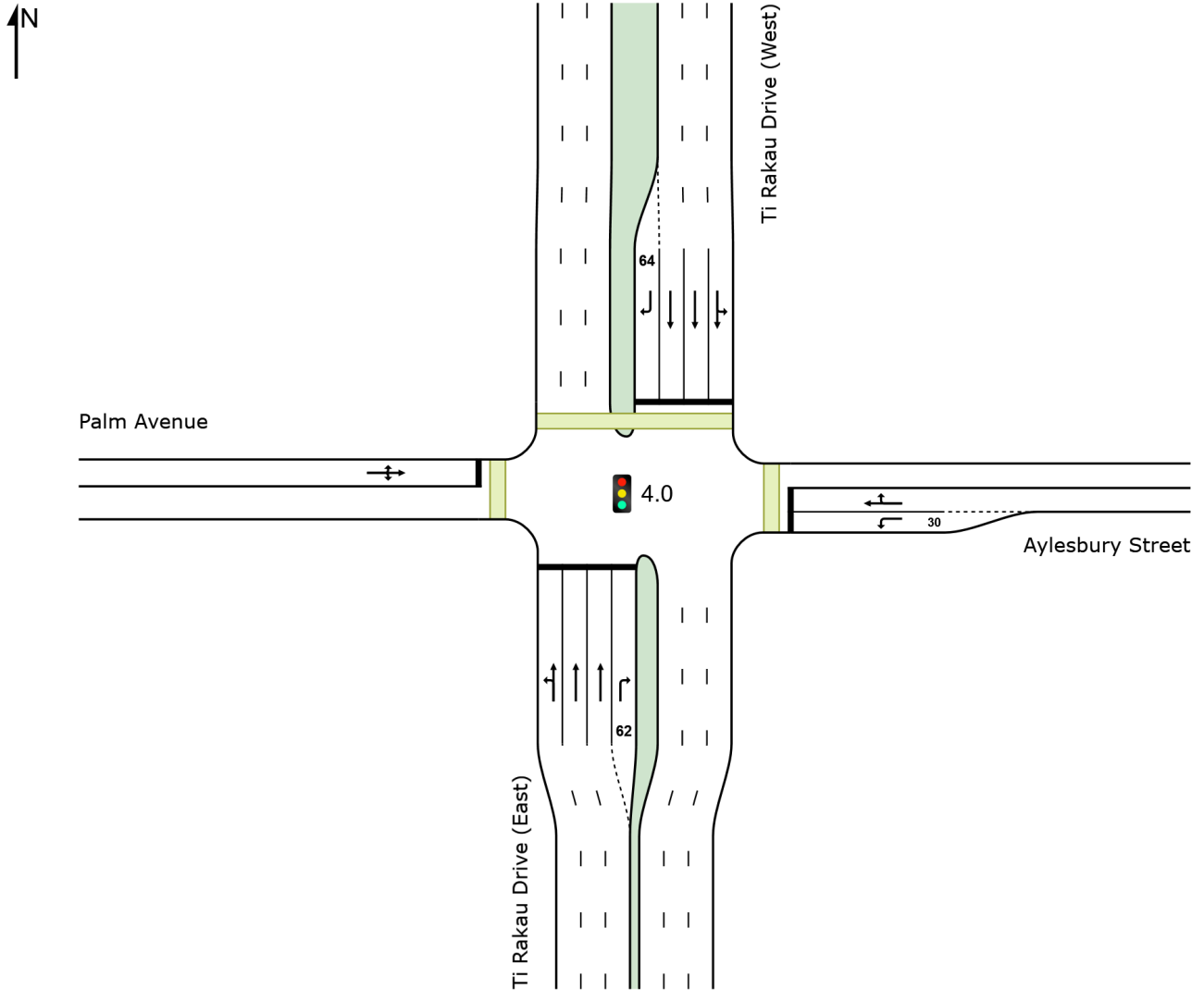
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SITE LAYOUT

Site: 4.0 [4.0 Palm Ave / Aylesbury St - Import (Site Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

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Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.2\CS 1.2 AM-V1.sip9

LANE SUMMARY

Site: 4.0 [4.0 Palm Ave / Aylesbury St - Import (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 80 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV %	[Total veh/h	HV %						[Veh	Dist] m				
South: Ti Rakau Drive (East)															
Lane 1	368	7.5	352	7.3	466	0.756	100	36.7	LOS D	13.5	100.2	Full	110	0.0	0.0
Lane 2	383	7.9	366	7.8	484	0.756	100	34.8	LOS C	14.1	105.2	Full	110	0.0	1.0
Lane 3	383	7.9	366	7.8	484	0.756	100	34.8	LOS C	14.1	105.2	Full	110	0.0	1.0
Lane 4	23	4.3	22	4.3	128	0.171	100	43.7	LOS D	0.9	6.3	Short	62	0.0	NA
Approach	1157	7.7	1106 ^{N1}	7.5		0.756		35.6	LOS D	14.1	105.2				
East: Aylesbury Street															
Lane 1	10	0.0	10	0.0	257	0.039	100	17.5	LOS B	0.2	1.2	Short	30	0.0	NA
Lane 2	20	0.0	20	0.0	135	0.148	100	40.8	LOS D	0.8	5.4	Full	40	0.0	0.0
Approach	30	0.0	30	0.0		0.148		33.0	LOS C	0.8	5.4				
North: Ti Rakau Drive (West)															
Lane 1	412	7.8	404	7.9	485	0.835	100	39.2	LOS D	17.1	128.1	Full	174	0.0	0.0
Lane 2	333	7.8	327	7.9	392	0.835	100	41.0	LOS D	14.2	106.1	Full	174	-19.1 ^{N3}	0.0
Lane 3	341	7.8	335	7.9	402	0.835	100	40.8	LOS D	14.5	108.5	Full	174	-17.0 ^{N3}	0.0
Lane 4	21	0.0	21	0.0	132	0.156	100	43.5	LOS D	0.8	5.6	Short	64	0.0	NA
Approach	1107	7.7	1087 ^{N1}	7.7		0.835		40.3	LOS D	17.1	128.1				
West: Palm Avenue															
Lane 1	135	4.4	135	4.4	473	0.285	100	27.3	LOS C	4.1	29.9	Full	87	-8.6 ^{N3}	0.0
Approach	135	4.4	135	4.4		0.285		27.3	LOS C	4.1	29.9				
Intersection	2429	7.4	2358 ^{N1}	7.6		0.835		37.3	LOS D	17.1	128.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

Approach Lane Flows (veh/h)													
South: Ti Rakau Drive (East)													
Mov. From S To Exit:	L2		T1		R2		Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	W	N	E										
Lane 1	33	319	-	352	7.3		466	0.756	100	NA	NA		
Lane 2	-	366	-	366	7.8		484	0.756	100	NA	NA		
Lane 3	-	366	-	366	7.8		484	0.756	100	NA	NA		
Lane 4	-	-	22	22	4.3		128	0.171	100	0.0	3		
Approach	33	1051	22	1106	7.5			0.756					

East: Aylesbury Street										
Mov. From E To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	10	-	-	10	0.0	257	0.039	100	0.0	2
Lane 2	-	10	10	20	0.0	135	0.148	100	NA	NA
Approach	10	10	10	30	0.0		0.148			
North: Ti Rakau Drive (West)										
Mov. From N To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	11	394	-	404	7.9	485	0.835	100	NA	NA
Lane 2	-	327	-	327	7.9	392	0.835	100	NA	NA
Lane 3	-	335	-	335	7.9	402	0.835	100	NA	NA
Lane 4	-	-	21	21	0.0	132	0.156	100	0.0	3
Approach	11	1056	21	1087	7.7		0.835			
West: Palm Avenue										
Mov. From W To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	63	10	62	135	4.4	473	0.285	100	NA	NA
Approach	63	10	62	135	4.4		0.285			
Total %HV Deg. Satn (v/c)										
Intersection	2358	7.6					0.835			

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

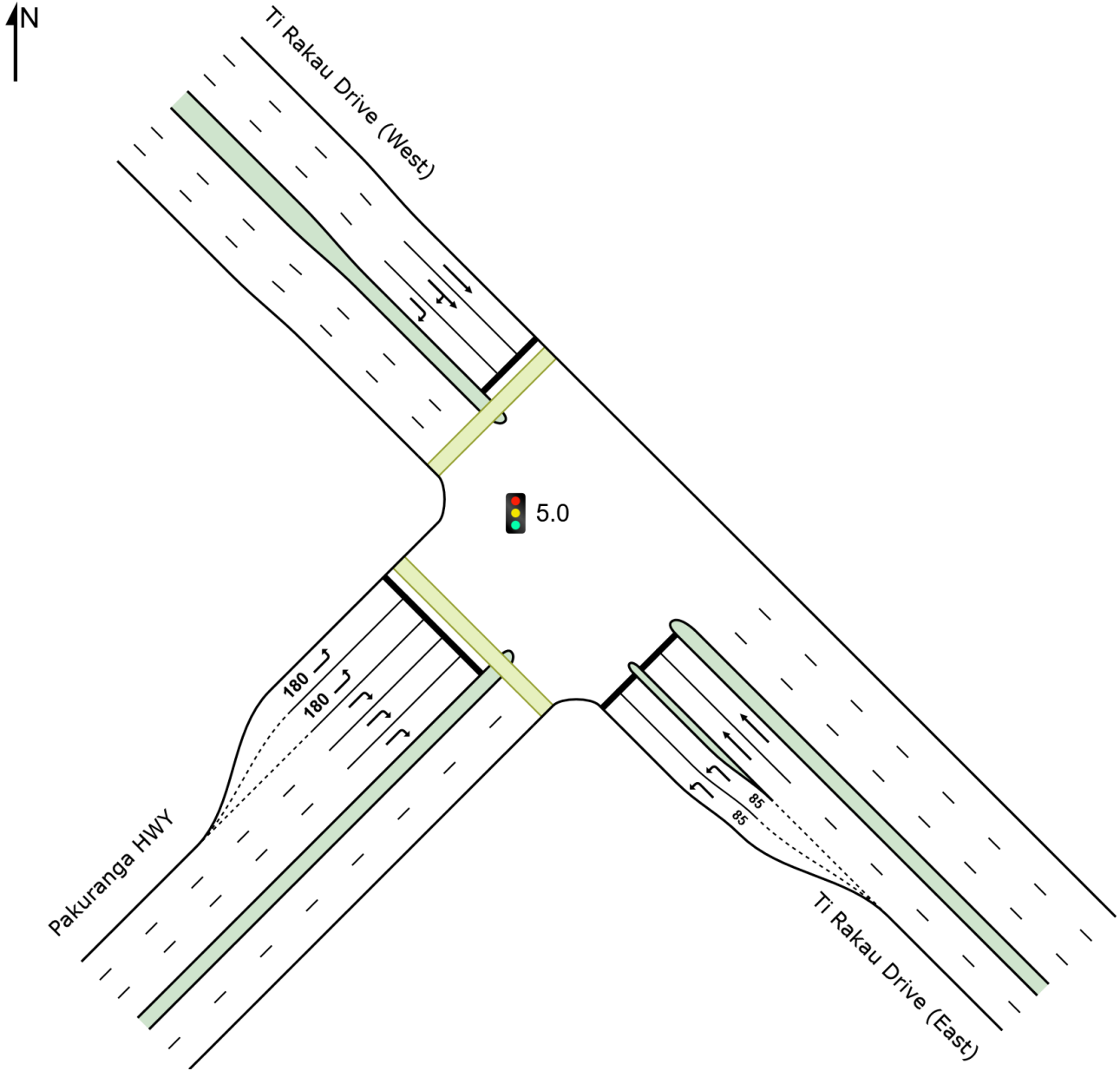
Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate % veh/h	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Ti Rakau Drive (East)											
Merge Type: Not Applied											
	Full Length Lane	1	Merge Analysis not applied.								
	Full Length Lane	2	Merge Analysis not applied.								
	Full Length Lane	3	Merge Analysis not applied.								
East Exit: Aylesbury Street											
Merge Type: Not Applied											
	Full Length Lane	1	Merge Analysis not applied.								
North Exit: Ti Rakau Drive (West)											
Merge Type: Not Applied											
	Full Length Lane	1	Merge Analysis not applied.								
	Full Length Lane	2	Merge Analysis not applied.								
	Full Length Lane	3	Merge Analysis not applied.								
West Exit: Palm Avenue											
Merge Type: Not Applied											
	Full Length Lane	1	Merge Analysis not applied.								

SITE LAYOUT

Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.2\CS 1.2 AM-V1.sip9

LANE SUMMARY

Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 61 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV %	[Total veh/h	HV %						[Veh	Dist] m				
SouthEast: Ti Rakau Drive (East)															
Lane 1	786	9.6	706	9.5	838	0.842	100	26.4	LOS C	19.6 ^{N4}	148.5 ^{N4}	Short	85	0.0	NA
Lane 2	786	9.6	706	9.5	838	0.842	100	26.4	LOS C	19.6 ^{N4}	148.5 ^{N4}	Short	85	0.0	NA
Lane 3	258	11.3	232	11.3	383	0.605	100	24.6	LOS C	6.6	50.4	Full	91	0.0	50.0 ⁸
Lane 4	256	11.3	231	11.3	381	0.605	100	24.6	LOS C	6.5	50.2	Full	91	0.0	0.0
Approach	2086	10.0	1874 ^{N1}	9.9		0.842		26.0	LOS C	19.6	148.5				
NorthWest: Ti Rakau Drive (West)															
Lane 1	154	24.0	152	24.2	519	0.292	33 ⁵	17.6	LOS B	3.5	29.7	Full	110	0.0	0.0
Lane 2	499	5.2	490	5.2	561	0.875	100	36.1	LOS D	17.6	128.5	Full	110	0.0	19.1
Lane 3	486	5.2	478	5.2	546	0.875	100	36.3	LOS D	17.2	125.7	Full	110	0.0	17.0
Approach	1139	7.7	1120 ^{N1}	7.8		0.875		33.7	LOS C	17.6	128.5				
SouthWest: Pakuranga HWY															
Lane 1	324	4.9	324	4.9	568	0.571	100	26.5	LOS C	8.3	60.7	Short	180	0.0	NA
Lane 2	324	4.9	324	4.9	568	0.571	100	26.5	LOS C	8.3	60.7	Short	180	0.0	NA
Lane 3	287	9.3	287	9.3	313	0.917	100	48.9	LOS D	11.3	85.2	Full	1650	0.0	0.0
Lane 4	287	9.3	287	9.3	313	0.917	100	48.9	LOS D	11.3	85.2	Full	1650	0.0	0.0
Lane 5	290	9.3	290	9.3	316	0.917	100	48.9	LOS D	11.4	86.0	Full	1650	0.0	0.0
Approach	1511	7.4	1511	7.4		0.917		39.3	LOS D	11.4	86.0				
Intersection	4736	8.6	4504 ^{N1}	9.1		0.917		32.4	LOS C	19.6	148.5				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

⁵ Lane under-utilisation found by the program

⁸ Probability of Blockage has been set on the basis of a queue that overflows from a short lane.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)										
SouthEast: Ti Rakau Drive (East)										
Mov. From SE To Exit:	L2		Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.	
	SW	NW								
Lane 1	706	-	706	9.5	838	0.842	100	56.4	2	
Lane 2	706	-	706	9.5	838	0.842	100	56.4	3	
Lane 3	-	232	232	11.3	383	0.605	100	NA	NA	
Lane 4	-	231	231	11.3	381	0.605	100	NA	NA	
Approach	1411	462	1874	9.9		0.842				

NorthWest: Ti Rakau Drive (West)										
Mov. From NW To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SE	SW								
Lane 1	152	-	152	24.2	519	0.292	33 ⁵	NA	NA	
Lane 2	-	490	490	5.2	561	0.875	100	NA	NA	
Lane 3	-	478	478	5.2	546	0.875	100	NA	NA	
Approach	152	968	1120	7.8		0.875				
SouthWest: Pakuranga HWY										
Mov. From SW To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	NW	SE								
Lane 1	324	-	324	4.9	568	0.571	100	0.0	2	
Lane 2	324	-	324	4.9	568	0.571	100	0.0	4	
Lane 3	-	287	287	9.3	313	0.917	100	NA	NA	
Lane 4	-	287	287	9.3	313	0.917	100	NA	NA	
Lane 5	-	290	290	9.3	316	0.917	100	NA	NA	
Approach	648	863	1511	7.4		0.917				
Total %HV Deg. Satn (v/c)										
Intersection	4504	9.1		0.917						

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

⁵ Lane under-utilisation found by the program

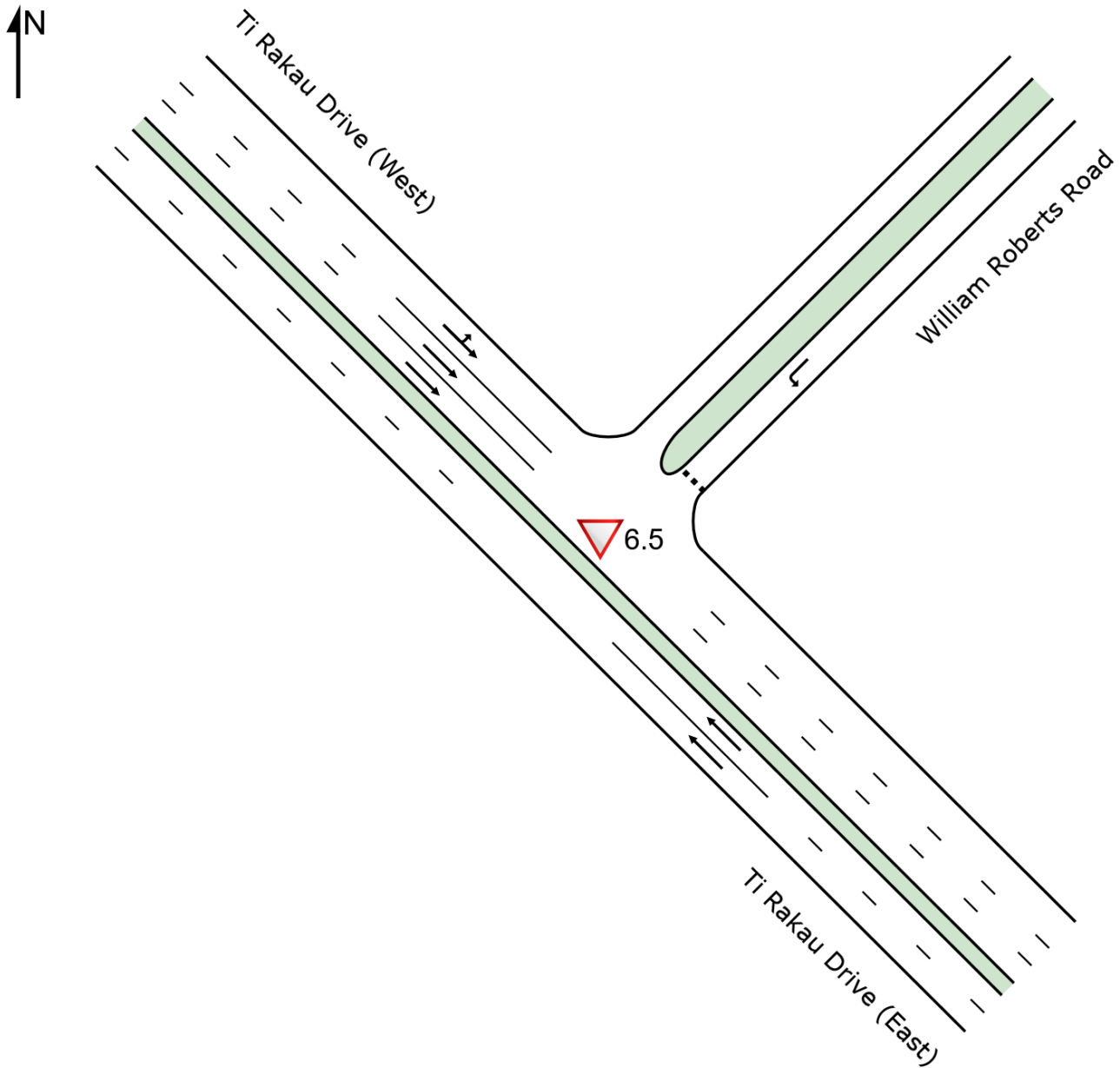
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Lane Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
SouthEast Exit: Ti Rakau Drive (East)												
Merge Type: Not Applied												
	Full Length Lane	1	Merge Analysis not applied.									
	Full Length Lane	2	Merge Analysis not applied.									
	Full Length Lane	3	Merge Analysis not applied.									
NorthWest Exit: Ti Rakau Drive (West)												
Merge Type: Not Applied												
	Full Length Lane	1	Merge Analysis not applied.									
	Full Length Lane	2	Merge Analysis not applied.									
	Full Length Lane	3	Merge Analysis not applied.									
SouthWest Exit: Pakuranga HWY												
Merge Type: Not Applied												
	Full Length Lane	1	Merge Analysis not applied.									
	Full Length Lane	2	Merge Analysis not applied.									

SITE LAYOUT

▽ Site: 6.5 [6.5 William Roberts Rd / Ti Rakau Dr - Import (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandennee\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.2\CS 1.2 AM-V1.sip9

LANE SUMMARY

Site: 6.5 [6.5 William Roberts Rd / Ti Rakau Dr - Import (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]						[Veh]	[Dist m]				
SouthEast: Ti Rakau Drive (East)															
Lane 1	1002	10.1	894	10.0	1783	0.501	100	0.0	LOS A	0.0	0.0	Full	18	0.0	0.0
Lane 2	991	10.1	884	10.0	1764	0.501	100	0.0	LOS A	0.0	0.0	Full	18	0.0	0.0
Approach	1993	10.1	1778 ^{N1}	10.0		0.501		0.0	NA	0.0	0.0				
NorthEast: William Roberts Road															
Lane 1	263	8.0	263	8.0	541	0.486	100	3.3	LOS A	3.2 ^{N5}	24.0 ^{N5}	Full	110	-50.0 ^{N3}	0.0
Approach	263	8.0	263	8.0		0.486		3.3	LOS A	3.2	24.0				
NorthWest: Ti Rakau Drive (West)															
Lane 1	369	10.3	368	10.3	1829	0.201	100	2.6	LOS A	3.1 ^{N5}	23.3 ^{N5}	Full	97	0.0	14.1
Lane 2	352	12.1	351	12.1	1742	0.201	100	0.0	LOS A	4.7 ^{N5}	36.2 ^{N5}	Full	97	0.0	0.0
Lane 3	293	12.1	292	12.1	1450	0.201	100	0.0	LOS A	0.0	0.0	Full	97	-16.8 ^{N3}	0.0
Approach	1013	11.5	1011 ^{N1}	11.5		0.201		0.9	NA	4.7	36.2				
Intersection	3269	10.3	3051 ^{N1}	11.1		0.501		0.6	NA	4.7	36.2				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

^{N5} Continuous Lane results determined by Back of Queue values of downstream lanes (proportional to lane movement flows).

Approach Lane Flows (veh/h)									
SouthEast: Ti Rakau Drive (East)									
Mov. From SE To Exit:	T1	Total	%HV		Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	NW			Cap. veh/h					
Lane 1	894	894	10.0	1783	0.501	100	NA	NA	
Lane 2	884	884	10.0	1764	0.501	100	NA	NA	
Approach	1778	1778	10.0		0.501				
NorthEast: William Roberts Road									
Mov. From NE To Exit:	L2	Total	%HV		Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SE			Cap. veh/h					
Lane 1	263	263	8.0	541	0.486	100	NA	NA	
Approach	263	263	8.0		0.486				
NorthWest: Ti Rakau Drive (West)									

Mov. From NW To Exit:	L2 NE	T1 SE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	204	165	368	10.3	1829	0.201	100	NA	NA
Lane 2	-	351	351	12.1	1742	0.201	100	NA	NA
Lane 3	-	292	292	12.1	1450	0.201	100	NA	NA
Approach	204	807	1011	11.5		0.201			
Total %HV Deg.Satn (v/c)									
Intersection	3051	11.1		0.501					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

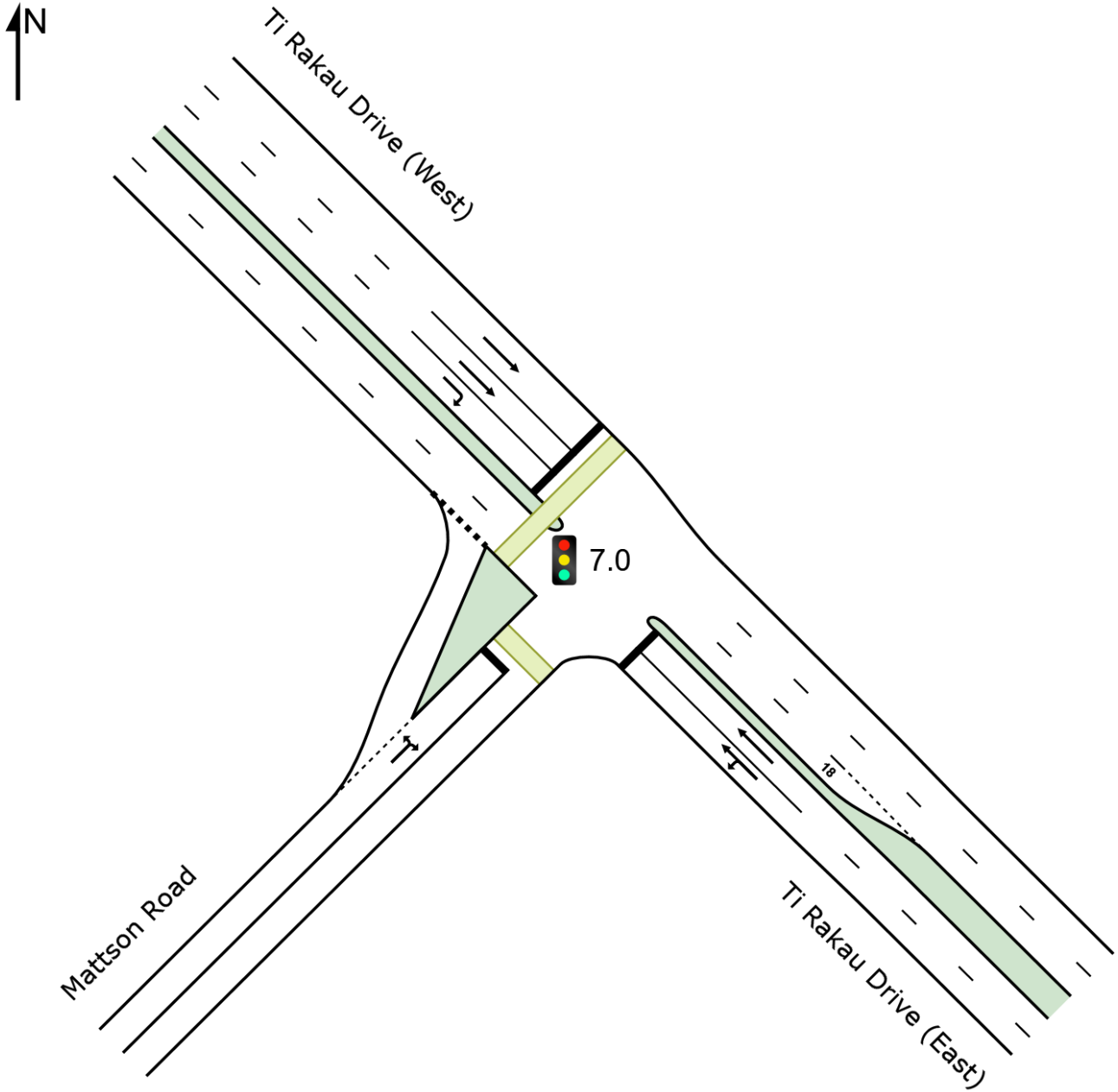
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec		
SouthEast Exit: Ti Rakau Drive (East)												
Merge Type: Not Applied												
Full Length Lane	1										Merge Analysis not applied.	
Full Length Lane	2										Merge Analysis not applied.	
Full Length Lane	3										Merge Analysis not applied.	
NorthEast Exit: William Roberts Road												
Merge Type: Not Applied												
Full Length Lane	1										Merge Analysis not applied.	
NorthWest Exit: Ti Rakau Drive (West)												
Merge Type: Not Applied												
Full Length Lane	1										Merge Analysis not applied.	
Full Length Lane	2										Merge Analysis not applied.	

SITE LAYOUT

 Site: 7.0 [7.0 Mattson Rd/ Ti Rakau Dr (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandennee\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.2\CS 1.2 AM-V1.sip9

LANE SUMMARY

Site: 7.0 [7.0 Mattson Rd/ Ti Rakau Dr (Site Folder: General)]

Network: N101 [AM
(Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
SouthEast: Ti Rakau Drive (East)															
Lane 1	969	10.3	861	10.2	963	0.894	100	30.0	LOS C	38.3	291.8	Full	187	0.0	45.8
Lane 2	976	10.3	866	10.3	969	0.894	100	30.1	LOS C	38.5	293.4	Full	187	0.0	46.3
Approach	1945	10.3	1727 ^N ₁	10.2		0.894		30.1	LOS C	38.5	293.4				
NorthWest: Ti Rakau Drive (West)															
Lane 1	525	11.3	524	11.3	1318	0.398	100	5.3	LOS A	3.8 ^{N4}	29.4 ^{N4}	Full	18	0.0	50.0
Lane 2	494	11.3	493	11.3	1239	0.398	100	5.3	LOS A	3.8 ^{N4}	29.4 ^{N4}	Full	18	0.0	50.0
Lane 3	52	7.7	52	7.7	129	0.401	100	43.5	LOS D	2.1	15.6	Full	18	0.0	0.0
Approach	1071	11.1	1069 ^N ₁	11.1		0.401		7.2	LOS A	3.8	29.4				
SouthWest: Mattson Road															
Lane 1	136	4.4	136	4.4	515	0.264	100	25.0	LOS C	4.3	31.0	Full	282	0.0	0.0
Approach	136	4.4	136	4.4		0.264		25.0	LOS C	4.3	31.0				
Intersection	3152	10.3	2932 ^N ₁	11.1		0.894		21.5	LOS C	38.5	293.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)										
SouthEast: Ti Rakau Drive (East)										
Mov.	L2	T1	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From SE To Exit:	SW	NW			veh/h	v/c	%	%		
Lane 1	21	839	861	10.2	963	0.894	100	NA	NA	
Lane 2	-	866	866	10.3	969	0.894	100	NA	NA	
Approach	21	1705	1727	10.2		0.894				
NorthWest: Ti Rakau Drive (West)										
Mov.	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From NW To Exit:	SE	SW			veh/h	v/c	%	%		
Lane 1	524	-	524	11.3	1318	0.398	100	NA	NA	
Lane 2	493	-	493	11.3	1239	0.398	100	NA	NA	
Lane 3	-	52	52	7.7	129	0.401	100	NA	NA	
Approach	1017	52	1069	11.1		0.401				
SouthWest: Mattson Road										
Mov.	L2	R2	Total	%HV	Deg.	Lane Util.	Prob.	Ov.		

From SW To Exit:	NW	SE			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	72	64	136	4.4	515	0.264	100	NA	NA
Approach	72	64	136	4.4		0.264			
Total %HV Deg. Satn (v/c)									
Intersection	2932	11.1		0.894					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East) Merge Type: Priority												
Exit Short Lane	3	18	0.0	493	521	3.00	2.00	64	1265	0.051	0.9	1.1
Merge Lane	2	-	100.0	Merge Lane is not Opposed				493	1800	0.274	0.0	0.0
NorthWest Exit: Ti Rakau Drive (West) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
SouthWest Exit: Mattson Road Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										

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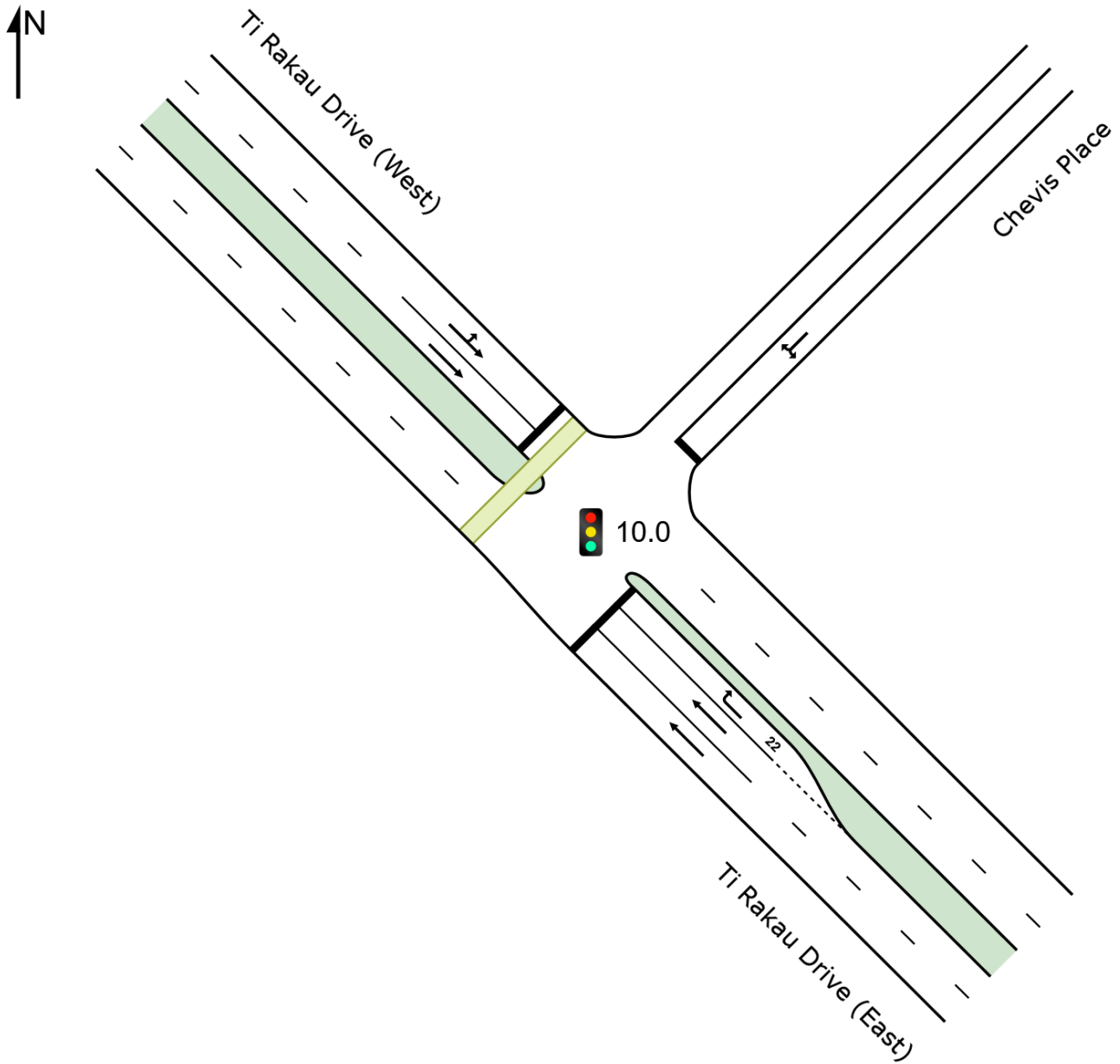
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SITE LAYOUT

Site: 10.0 [10.0 Edgewater Dr (West) / Chevis Pl (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 10.0 [10.0 Edgewater Dr (West) / Chevis Pl (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
SouthEast: Ti Rakau Drive (East)															
Lane 1	878	10.4	817	10.5	949	0.861	100	24.1	LOS C	29.7	226.8	Full	162	0.0	35.7
Lane 2	855	10.4	795	10.5	923 ¹	0.861	100	24.2	LOS C	28.9	220.2	Full	162	0.0	33.0
Lane 3	11	9.1	10	9.1	239	0.043	100	33.4	LOS C	0.3	2.3	Short	22	0.0	NA
Approach	1744	10.4	1622 ^N	10.4		0.861		24.2	LOS C	29.7	226.8				
NorthEast: Chevis Place															
Lane 1	29	6.9	29	6.9	183	0.158	100	36.6	LOS D	0.9	7.0	Full	138	0.0	0.0
Approach	29	6.9	29	6.9		0.158		36.6	LOS D	0.9	7.0				
NorthWest: Ti Rakau Drive (West)															
Lane 1	466	11.6	448	11.6	956	0.469	100	11.9	LOS B	9.8	75.6	Full	68	0.0	14.6
Lane 2	440	11.6	423	11.6	903	0.469	100	11.8	LOS B	9.3	71.7	Full	68	0.0	9.7
Approach	906	11.6	871 ^{N1}	11.6		0.469		11.8	LOS B	9.8	75.6				
Intersection	2679	10.8	2522 ^N	11.4		0.861		20.1	LOS C	29.7	226.8				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)										
SouthEast: Ti Rakau Drive (East)										
Mov.	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane No.	
From SE To Exit:	NW	NE			veh/h	v/c	%	%		
Lane 1	817	-	817	10.5	949	0.861	100	NA	NA	
Lane 2	795	-	795	10.5	923 ¹	0.861	100	NA	NA	
Lane 3	-	10	10	9.1	239	0.043	100	0.0	2	
Approach	1612	10	1622	10.4		0.861				
NorthEast: Chevis Place										
Mov.	L2	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane No.	
From NE To Exit:	SE	NW			veh/h	v/c	%	%		
Lane 1	11	18	29	6.9	183	0.158	100	NA	NA	
Approach	11	18	29	6.9		0.158				
NorthWest: Ti Rakau Drive (West)										
Mov.	L2	T1	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane No.	
From NW To Exit:	SE	NE			veh/h	v/c	%	%		
Lane 1	11	18	29	6.9	183	0.158	100	NA	NA	
Approach	11	18	29	6.9		0.158				

From NW To Exit:	NE	SE			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	11	437	448	11.6	956	0.469	100	NA	NA
Lane 2	-	423	423	11.6	903	0.469	100	NA	NA
Approach	11	861	871	11.6		0.469			
Total		%HV Deg. Satn (v/c)							
Intersection	2522	11.4		0.861					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- 1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

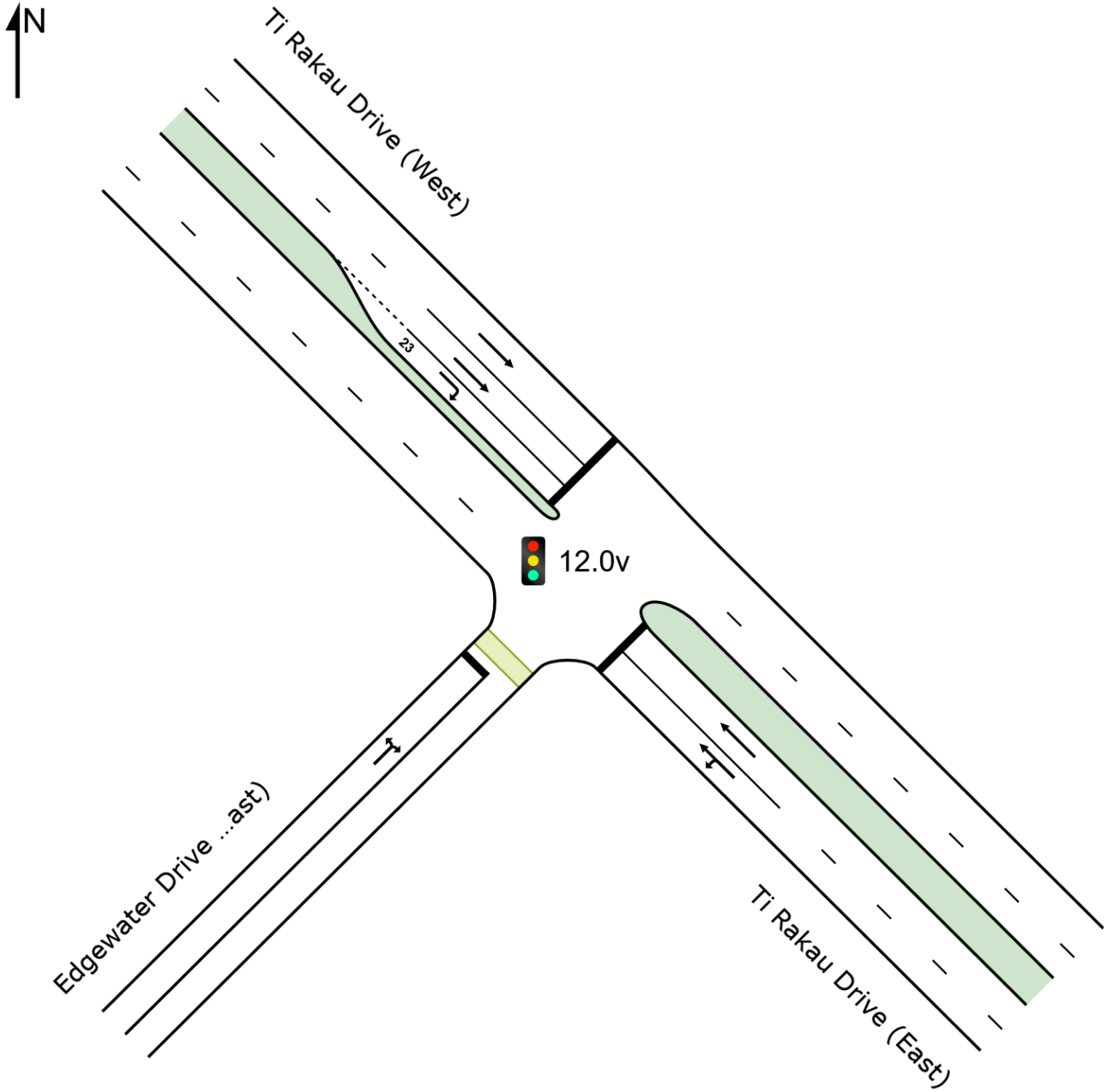
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.
NorthEast Exit: Chevis Place												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
NorthWest Exit: Ti Rakau Drive (West)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.

SITE LAYOUT

Site: 12.0v [12.0 Edgewater Dr (East) / Ti Rakau Dr - Conversion (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 12.0v [12.0 Edgewater Dr (East) / Ti Rakau Dr - Conversion (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 67 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS [Total HV] veh/h %		ARRIVAL FLOWS [Total HV] veh/h %		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %	
SouthEast: Ti Rakau Drive (East)															
Lane 1	955	9.3	887	9.3	997	0.890	100	27.3	LOS C	33.9	256.0	Full	479	0.0	0.0
Lane 2	977	10.1	908	10.2	1021	0.890	100	26.2	LOS C	34.5	262.5	Full	479	0.0	0.0
Approach	1932	9.7	1795 ^N ₁	9.7		0.890		26.8	LOS C	34.5	262.5				
NorthWest: Ti Rakau Drive (West)															
Lane 1	474	11.3	456	11.4	1050	0.434	100	9.5	LOS A	8.8	67.5	Full	103	0.0	0.0
Lane 2	400	11.3	384	11.4	886 ¹	0.434	100	9.3	LOS A	7.2	55.4	Full	103	0.0	0.0
Lane 3	48	13.0	47	13.0	145	0.321	100	39.1	LOS D	1.6	12.1	Short	23	0.0	NA
Approach	922	11.4	887 ^{N1}	11.4		0.434		11.0	LOS B	8.8	67.5				
SouthWest: Edgewater Drive (East)															
Lane 1	191	8.3	191	8.3	263	0.724	100	37.9	LOS D	6.6	49.2	Full	500	0.0	0.0
Approach	191	8.3	191	8.3		0.724		37.9	LOS D	6.6	49.2				
Intersection	3045	10.1	2873 ^N ₁	10.7		0.890		22.6	LOS C	34.5	262.5				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)										
SouthEast: Ti Rakau Drive (East)										
Mov. From SE To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SW	NW								
Lane 1	134	753	887	9.3	997	0.890	100	NA	NA	
Lane 2	-	908	908	10.2	1021	0.890	100	NA	NA	
Approach	134	1661	1795	9.7		0.890				
NorthWest: Ti Rakau Drive (West)										
Mov. From NW To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SE	SW								
Lane 1	456	-	456	11.4	1050	0.434	100	NA	NA	
Lane 2	384	-	384	11.4	886 ¹	0.434	100	NA	NA	
Lane 3	-	47	47	13.0	145	0.321	100	0.0	2	
Approach	840	47	887	11.4		0.434				
SouthWest: Edgewater Drive (East)										

Mov. From SW To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	NW	SE							
Lane 1	132	59	191	8.3	263	0.724	100	NA	NA
Approach	132	59	191	8.3		0.724			
Total %HV Deg. Satn (v/c)									
Intersection	2873	10.7		0.890					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- 1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
SouthEast Exit: Ti Rakau Drive (East) Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.
NorthWest Exit: Ti Rakau Drive (West) Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.
SouthWest Exit: Edgewater Drive (East) Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.

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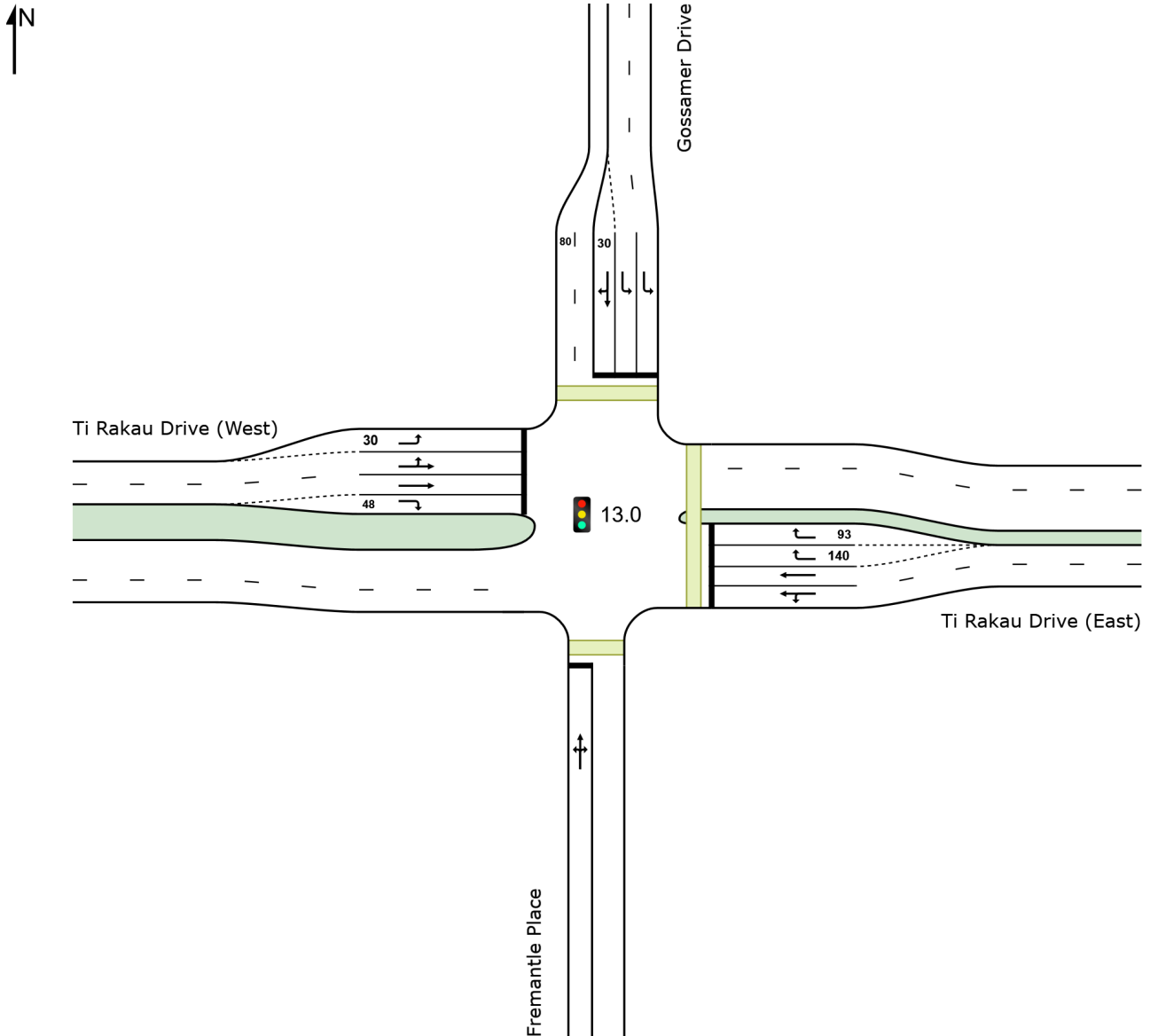
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SITE LAYOUT

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: General)]

Scheme Design
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

Scheme Design

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 160 seconds (Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	[HV %	[Total veh/h	[HV %						[Veh	[Dist] m				
South: Fremantle Place															
Lane 1	51	7.8	51	7.8	67	0.764	100	94.5	LOS F	4.3	32.4	Full	285	0.0	0.0
Approach	51	7.8	51	7.8		0.764		94.5	LOS F	4.3	32.4				
East: Ti Rakau Drive (East)															
Lane 1	791	10.7	791	10.7	745	1.063	100	117.2	LOS F	79.4	607.0	Full	636	0.0	0.8
Lane 2	723	10.8	723	10.8	680 ¹	1.063	100	144.9	LOS F	91.2	697.7	Full	636	0.0	13.4
Lane 3	128	7.8	128	7.8	357	0.358	47 ⁶	35.2	LOS D	4.6	34.6	Short	140	0.0	NA
Lane 4	271	7.8	271	7.8	357	0.759	100	51.0	LOS D	13.9	103.4	Short	93	0.0	NA
Approach	1913	10.1	1913	10.1		1.063		112.8	LOS F	91.2	697.7				
North: Gossamer Drive															
Lane 1	571	8.9	571	8.9	569	1.004	100	116.6	LOS F	62.3	469.6	Full	1010	0.0	0.0
Lane 2	359	8.9	359	8.9	357 ¹	1.004	100	127.1	LOS F	40.8	307.1	Full	1010	0.0	0.0
Lane 3	291	5.8	291	5.8	241 ¹	1.208	100	278.9	LOS F	48.1	353.3	Short	30	0.0	NA
Approach	1221	8.2	1221	8.2		1.208		158.3	LOS F	62.3	469.6				
West: Ti Rakau Drive (West)															
Lane 1	55	9.1	53	9.1	965	0.055	8 ⁵	14.9	LOS B	1.3	10.1	Short	30	0.0	NA
Lane 2	395	11.4	380	11.5	530 ¹	0.718	100	49.3	LOS D	25.2	193.6	Full	479	0.0	0.0
Lane 3	419	11.4	405	11.5	564 ¹	0.718	100	50.5	LOS D	27.4	210.9	Full	479	0.0	0.0
Lane 4	11	9.1	11	9.1	264	0.040	100	66.0	LOS E	0.7	5.3	Short	48	0.0	NA
Approach	880	11.3	849 ^{N1}	11.3		0.718		47.9	LOS D	27.4	210.9				
Intersection	4065	9.8	4034 ^{N1}	9.8		1.208		112.7	LOS F	91.2	697.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

⁵ Lane under-utilisation found by the program

⁶ Lane under-utilisation due to downstream effects

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)										
South: Fremantle Place										
Mov. From S To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.
	W	N	E							
Lane 1	23	11	17	51	7.8	67	0.764	100	NA	NA
Approach	23	11	17	51	7.8		0.764			
East: Ti Rakau Drive (East)										

Mov. From E To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	18	773	-	791	10.7	745	1.063	100	NA	NA
Lane 2	-	723	-	723	10.8	680 ¹	1.063	100	NA	NA
Lane 3	-	-	128	128	7.8	357	0.358	47 ⁶	0.0	2
Lane 4	-	-	271	271	7.8	357	0.759	100	14.6	3
Approach	18	1496	399	1913	10.1		1.063			
North: Gossamer Drive										
Mov. From N To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	571	-	-	571	8.9	569	1.004	100	NA	NA
Lane 2	359	-	-	359	8.9	357 ¹	1.004	100	NA	NA
Lane 3	-	11	280	291	5.8	241 ¹	1.208	100	100.0	2
Approach	930	11	280	1221	8.2		1.208			
West: Ti Rakau Drive (West)										
Mov. From W To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	53	-	-	53	9.1	965	0.055	8 ⁵	0.0	2
Lane 2	-	380	-	380	11.5	530 ¹	0.718	100	NA	NA
Lane 3	-	405	-	405	11.5	564 ¹	0.718	100	NA	NA
Lane 4	-	-	11	11	9.1	264	0.040	100	0.0	3
Approach	53	785	11	849	11.3		0.718			
Total %HV Deg. Satn (v/c)										
Intersection	4034	9.8		1.208						

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- 1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
- 5 Lane under-utilisation found by the program
- 6 Lane under-utilisation due to downstream effects

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
South Exit: Fremantle Place Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Ti Rakau Drive (East) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: Gossamer Drive Merge Type: Zipper												
Exit Short Lane	1	80	50.0	141	147	2.50	2.00	181	1630	0.111	0.0	0.1
Merge Lane	2	-	50.0	90	94	2.50	2.00	282	1693	0.167	0.0	0.0
West Exit: Ti Rakau Drive (West) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

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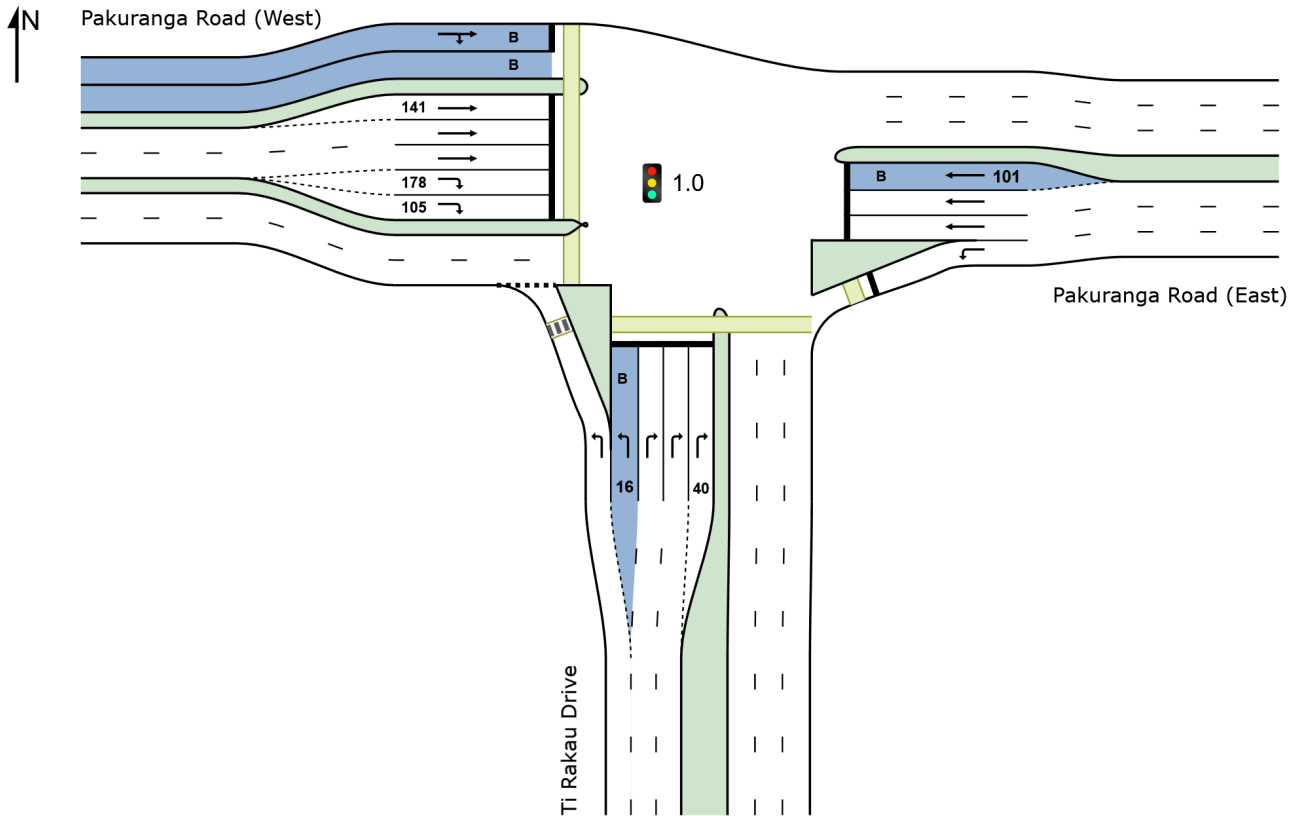
Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.2\CS 1.2 AM-V1.sip9

SITE LAYOUT

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

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LANE SUMMARY

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 77 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV %	[Total veh/h	HV %						[Veh	Dist] m				
South: Ti Rakau Drive															
Lane 1	767	4.8	755	4.8	1144 ¹	0.660	100	8.6	LOS A	11.0	80.4	Full	174	0.0	0.0
Lane 2 (B)	13	100.0	13	100.0	132	0.099	100	43.0	LOS D	0.4	5.6	Short	16	0.0	NA
Lane 3	380	4.1	375	4.0	420	0.892	100	47.9	LOS D	15.3	110.5	Full	174	0.0	0.0
Lane 4	325	4.1	320	4.0	359 ¹	0.892	100	47.8	LOS D	12.8	92.8	Full	174	0.0	0.0
Lane 5	325	4.1	320	4.0	359 ¹	0.892	100	47.8	LOS D	12.8	92.8	Short	40	0.0	NA
Approach	1811	5.1	1784 ^N ₁	5.0		0.892		31.2	LOS C	15.3	110.5				
East: Pakuranga Road (East)															
Lane 1	787	4.7	723	4.7	975	0.742	100	20.3	LOS C	18.8	136.8	Full	113	0.0	32.5
Lane 2	406	10.2	373	10.3	425	0.877	100	41.2	LOS D	14.7	112.1	Full	113	0.0	14.3
Lane 3	406	10.2	373	10.3	425	0.877	100	41.2	LOS D	14.7	112.1	Full	113	0.0	14.3
Lane 4 (B)	11	100.0	11	100.0	93	0.118	100	40.4	LOS D	0.4	4.9	Short	101	0.0	NA
Approach	1609	8.1	1480 ^N ₁	8.2		0.877		31.0	LOS C	18.8	136.8				
West: Pakuranga Road (West)															
Lane 1 (B)	42	100.0	42	100.0	89	0.472	100	40.2	LOS D	1.4	18.8	Full	388	0.0	0.0
Lane 2	450	7.1	450	7.1	554	0.813	100	32.0	LOS C	15.8	117.3	Short	141	0.0	NA
Lane 3	450	7.1	450	7.1	554	0.813	100	32.0	LOS C	15.8	117.3	Full	388	0.0	0.0
Lane 4	450	7.1	450	7.1	554	0.813	100	32.0	LOS C	15.8	117.3	Full	388	0.0	0.0
Lane 5	228	8.8	228	8.8	248	0.916	100	56.1	LOS E	9.7	72.7	Short	178	0.0	NA
Lane 6	228	8.8	228	8.8	248	0.916	100	56.1	LOS E	9.7	72.7	Short	105	0.0	NA
Approach	1847	9.6	1847	9.6		0.916		38.1	LOS D	15.8	117.3				
Intersection	5267	7.6	5111 ^N ₁	7.8		0.916		33.6	LOS C	18.8	136.8				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)											
South: Ti Rakau Drive											
Mov. From S To Exit:	L2		R2		Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	W	E	W	E							
Lane 1	755	-	755	4.8	1144 ¹	0.660	100	NA	NA	NA	
Lane 2	13	-	13	100.0	132	0.099	100	0.0	1		
Lane 3	-	375	375	4.0	420	0.892	100	NA	NA		
Lane 4	-	320	320	4.0	359 ¹	0.892	100	NA	NA		

Lane 5	-	320	320	4.0	359 ¹	0.892	100	94.8	4
Approach	768	1016	1784	5.0		0.892			
East: Pakuranga Road (East)									
Mov. From E To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	S	W							
Lane 1	723	-	723	4.7	975	0.742	100	NA	NA
Lane 2	-	373	373	10.3	425	0.877	100	NA	NA
Lane 3	-	373	373	10.3	425	0.877	100	NA	NA
Lane 4	-	11	11	100.0	93	0.118	100	0.0	3
Approach	723	756	1480	8.2		0.877			
West: Pakuranga Road (West)									
Mov. From W To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	E	S							
Lane 1	21	21	42	100.0	89	0.472	100	NA	NA
Lane 2	450	-	450	7.1	554	0.813	100	0.0	3
Lane 3	450	-	450	7.1	554	0.813	100	NA	NA
Lane 4	450	-	450	7.1	554	0.813	100	NA	NA
Lane 5	-	228	228	8.8	248	0.916	100	0.0	4
Lane 6	-	228	228	8.8	248	0.916	100	0.0	5
Approach	1371	476	1847	9.6		0.916			
Total %HV Deg. Satn (v/c)									
Intersection	5111	7.8		0.916					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- 1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

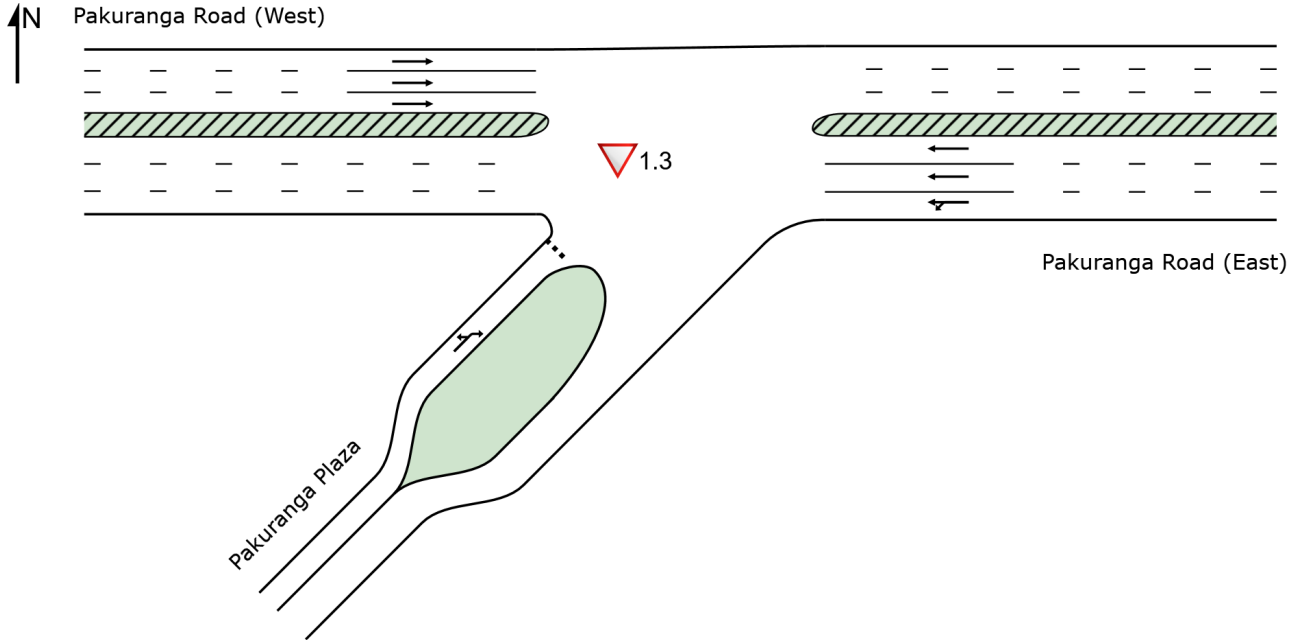
Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Ti Rakau Drive											
Merge Type: Not Applied											
Full Length Lane	1										
Full Length Lane	2										
Full Length Lane	3										
East Exit: Pakuranga Road (East)											
Merge Type: Not Applied											
Full Length Lane	1										
Full Length Lane	2										
Full Length Lane	3										
West Exit: Pakuranga Road (West)											
Merge Type: Not Applied											
Full Length Lane	1										
Full Length Lane	2										
Full Length Lane	3										

SITE LAYOUT

▽ Site: 1.3 [1.3 Mall/ Pakuranga Rd - PD (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

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LANE SUMMARY

Site: 1.3 [1.3 Mall/ Pakuranga Rd - PD (Site Folder: General)] Network: N101 [PM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	[HV %	[Total veh/h	[HV %						[Veh	[Dist] m				
East: Pakuranga Road (East)															
Lane 1	508	8.7	488	8.6	1847	0.264	100	1.0	LOS A	0.0	0.0	Full	152	0.0	0.0
Lane 2	515	7.3	494	7.2	1872	0.264	100	0.0	LOS A	0.0	0.0	Full	152	0.0	0.0
Lane 3	515	7.3	494	7.2	1872	0.264	100	0.0	LOS A	0.0	0.0	Full	152	0.0	0.0
Approach	1539	7.7	1476 ^{N1}	7.7		0.264		0.3	NA	0.0	0.0				
West: Pakuranga Road (West)															
Lane 1	797	6.6	792	6.6	1802	0.439	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Lane 2	797	6.6	792	6.6	1802	0.439	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Lane 3	792	6.6	787	6.6	1792	0.439	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Approach	2386	6.6	2371 ^{N1}	6.6		0.439		0.0	NA	0.0	0.0				
SouthWest: Pakuranga Plaza															
Lane 1	108	6.5	108	6.5	58	1.875	100	917.1	LOS F	27.5	203.5	Full	196	-5.9 ^{N7}	16.4
Approach	108	6.5	108	6.5		1.875		917.1	LOS F	27.5	203.5				
Intersection	4033	7.0	3955 ^{N1}	7.2		1.875		25.2	NA	27.5	203.5				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N7} The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)										
East: Pakuranga Road (East)										
Mov. From E To Exit:	L1	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SW	W								
Lane 1	90	398	488	8.6	1847	0.264	100	NA	NA	
Lane 2	-	494	494	7.2	1872	0.264	100	NA	NA	
Lane 3	-	494	494	7.2	1872	0.264	100	NA	NA	
Approach	90	1386	1476	7.7		0.264				
West: Pakuranga Road (West)										
Mov. From W To Exit:	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.		
	E									
Lane 1	792	792	6.6	1802	0.439	100	NA	NA		
Lane 2	792	792	6.6	1802	0.439	100	NA	NA		

Lane 3	787	787	6.6		1792	0.439	100	NA	NA
Approach	2371	2371	6.6			0.439			
SouthWest: Pakuranga Plaza									
Mov. From SW To Exit:	L3 W	R1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.
Lane 1	98	10	108	6.5	58	1.875	100	NA	NA
Approach	98	10	108	6.5		1.875			
Total %HV Deg. Satn (v/c)									
Intersection	3955	7.2		1.875					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

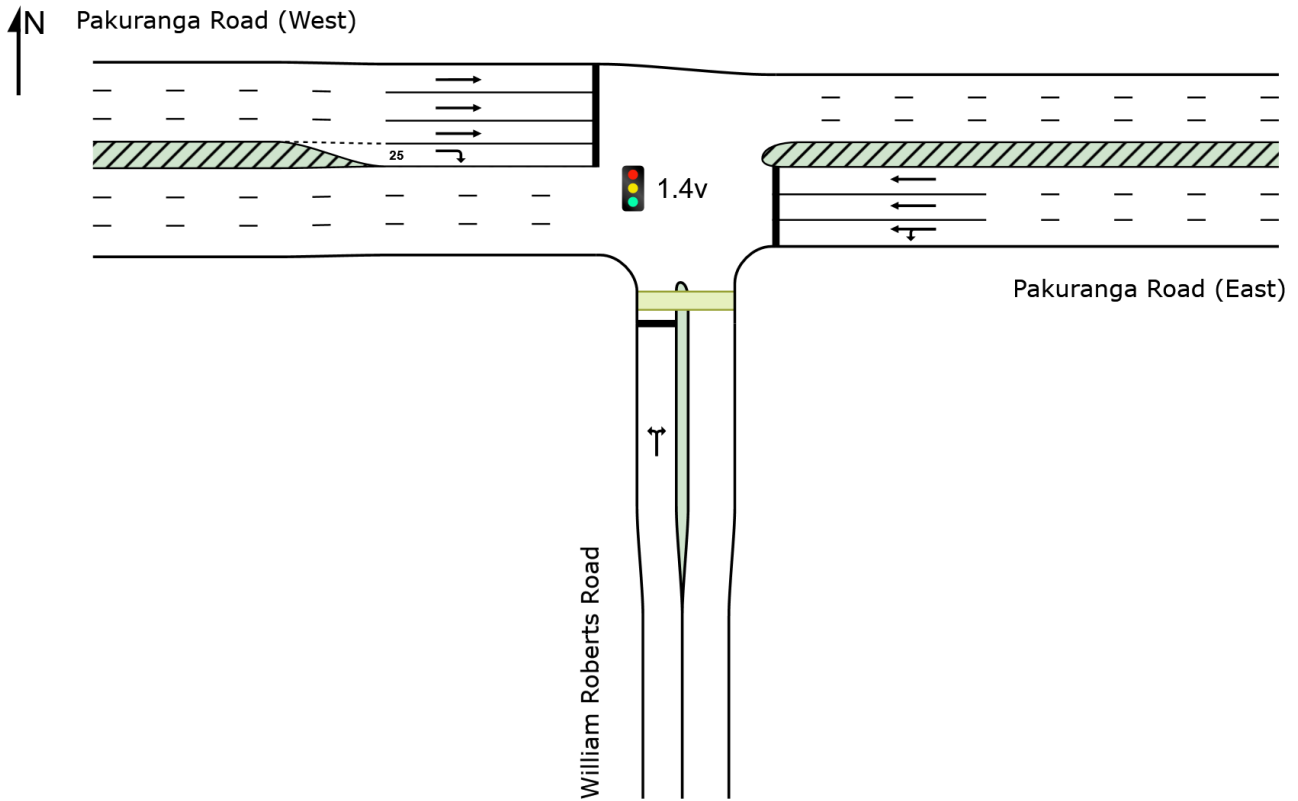
Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: Pakuranga Road (East)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
Full Length Lane	2										Merge Analysis not applied.
Full Length Lane	3										Merge Analysis not applied.
West Exit: Pakuranga Road (West)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
Full Length Lane	2										Merge Analysis not applied.
Full Length Lane	3										Merge Analysis not applied.
SouthWest Exit: Pakuranga Plaza											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.

SITE LAYOUT

 Site: 1.4v [1.4 William Roberts/ Pakuranga Rd - PD - Conversion (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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LANE SUMMARY

Site: 1.4v [1.4 William Roberts/ Pakuranga Rd - PD - Conversion (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]						[Veh]	[Dist m]				
South: William Roberts Road															
Lane 1	236	7.2	236	7.2	124	1.905	100	873.9	LOS F	48.0 ^{N4}	356.5 ^{N4}	Full	244	-28.7 ^{N7}	50.0
Approach	236	7.2	236	7.2		1.905		873.9	LOS F	48.0	356.5				
East: Pakuranga Road (East)															
Lane 1	489	7.3	489	7.3	1319	0.371	100	4.2	LOS A	4.8	35.5	Full	184	0.0	0.0
Lane 2	488	7.6	488	7.6	1315	0.371	100	6.3	LOS A	8.3	61.9	Full	184	0.0	0.0
Lane 3	493	7.6	493	7.6	1329	0.371	100	6.2	LOS A	8.3	62.1	Full	184	0.0	0.0
Approach	1471	7.5	1471	7.5		0.371		5.6	LOS A	8.3	62.1				
West: Pakuranga Road (West)															
Lane 1	1119	6.5	1116	6.6	1231	0.907	100	15.9	LOS B	30.0 ^{N4}	222.1 ^{N4}	Full	152	-19.6 ^{N3}	50.0
Lane 2	695	6.5	694	6.6	765	0.907	100	33.1	LOS C	30.0 ^{N4}	222.1 ^{N4}	Full	152	-50.0 ^{N3}	50.0
Lane 3	647	6.5	646	6.6	712 ¹	0.907	100	34.5	LOS C	30.0 ^{N4}	222.1 ^{N4}	Full	152	-50.0 ^{N3}	50.0
Lane 4	54	13.0	54	13.0	98	0.551	100	84.0	LOS F	3.6	28.3	Short	25	0.0	NA
Approach	2515	6.7	2510 ^{N1}	6.7		0.907		26.9	LOS C	30.0	222.1				
Intersection	4222	7.0	4216 ^{N1}	7.0		1.905		66.8	LOS E	48.0	356.5				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

^{N4} Average back of queue has been restricted to the available queue storage space.

^{N7} The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)										
South: William Roberts Road										
Mov. From S To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	141	95	236	7.2	124	1.905	100	NA	NA	
Approach	141	95	236	7.2		1.905				
East: Pakuranga Road (East)										
Mov. From E To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	73	416	489	7.3	1319	0.371	100	NA	NA	

Lane 2	-	488	488	7.6	1315	0.371	100	NA	NA
Lane 3	-	493	493	7.6	1329	0.371	100	NA	NA
Approach	73	1398	1471	7.5		0.371			
West: Pakuranga Road (West)									
Mov. From W To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	E	S							
Lane 1	1116	-	1116	6.6	1231	0.907	100	NA	NA
Lane 2	694	-	694	6.6	765	0.907	100	NA	NA
Lane 3	646	-	646	6.6	712 ¹	0.907	100	NA	NA
Lane 4	-	54	54	13.0	98	0.551	100	26.5	3
Approach	2456	54	2510	6.7		0.907			
Total %HV Deg. Satn (v/c)									
Intersection	4216	7.0		1.905					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- ¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
South Exit: William Roberts Road												
Merge Type: Not Applied												
Full Length Lane	1										Merge Analysis not applied.	
East Exit: Pakuranga Road (East)												
Merge Type: Not Applied												
Full Length Lane	1										Merge Analysis not applied.	
Full Length Lane	2										Merge Analysis not applied.	
Full Length Lane	3										Merge Analysis not applied.	
West Exit: Pakuranga Road (West)												
Merge Type: Not Applied												
Full Length Lane	1										Merge Analysis not applied.	
Full Length Lane	2										Merge Analysis not applied.	
Full Length Lane	3										Merge Analysis not applied.	

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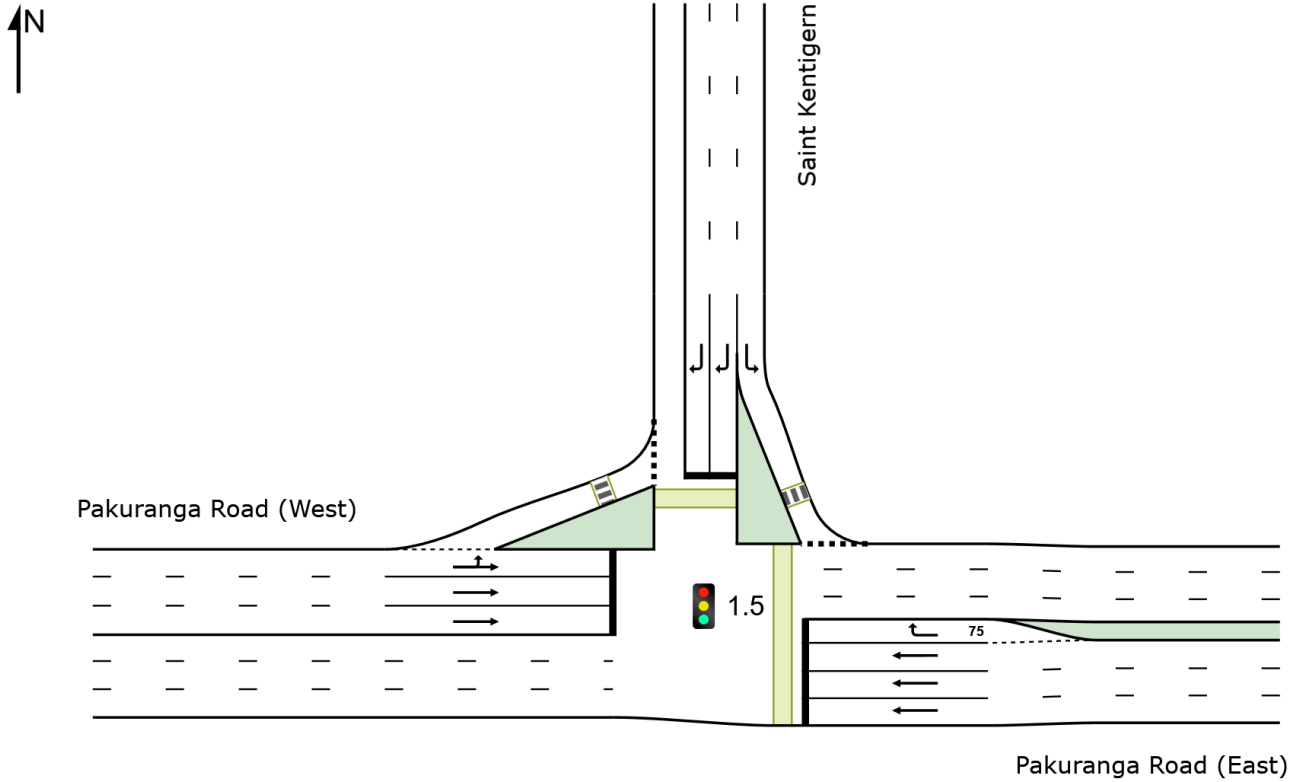
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SITE LAYOUT

Site: 1.5 [1.5 Saint Kentigern/ Pakuranga Rd - PD (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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LANE SUMMARY

Site: 1.5 [1.5 Saint Kentigern/ Pakuranga Rd - PD (Site Folder: Network: N101 [PM (Network General)]) Folder: General]]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]						[Veh	Dist]				
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			m	m	%	%	
East: Pakuranga Road (East)															
Lane 1	458	7.6	458	7.6	1415	0.323	100	5.4	LOS A	8.8	65.6	Full	87	0.0	0.0
Lane 2	458	7.6	458	7.6	1415	0.323	100	5.4	LOS A	8.8	65.6	Full	87	0.0	0.0
Lane 3	460	7.6	460	7.6	1422	0.323	100	5.4	LOS A	8.8	65.9	Full	87	0.0	0.0
Lane 4	27	3.7	27	3.7	139	0.194	100	52.6	LOS D	1.3	9.7	Short	75	0.0	NA
Approach	1402	7.5	1402	7.5		0.323		6.3	LOS A	8.8	65.9				
North: Saint Kentigern															
Lane 1	57	3.5	57	3.5	544	0.105	100	15.9	LOS B	1.8	12.7	Full	96	0.0	0.0
Lane 2	47	7.5	47	7.5	254	0.184	100	60.9	LOS E	2.7	20.2	Full	96	0.0	0.0
Lane 3	46	7.5	46	7.5	250	0.184	100	61.0	LOS E	2.7	19.9	Full	96	0.0	0.0
Approach	150	6.0	150	6.0		0.184		43.8	LOS D	2.7	20.2				
West: Pakuranga Road (West)															
Lane 1	603	6.2	592	6.3	701	0.845	100	22.6	LOS C	26.2	193.5	Full	184	0.0	19.6
Lane 2	982	6.5	965	6.5	1141	0.845	100	16.9	LOS B	36.4 ^{N4}	268.9 ^{N4}	Full	184	0.0	50.0
Lane 3	982	6.5	965	6.5	1141	0.845	100	20.0	LOS C	36.4 ^{N4}	268.9 ^{N4}	Full	184	0.0	50.0
Approach	2568	6.4	2521 ^{N1}	6.5		0.845		19.5	LOS B	36.4	268.9				
Intersection	4120	6.8	4073 ^{N1}	6.8		0.845		15.8	LOS B	36.4	268.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)										
East: Pakuranga Road (East)										
Mov.	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From E To Exit:	W	N								
Lane 1	458	-	458	7.6	1415	0.323	100	NA	NA	
Lane 2	458	-	458	7.6	1415	0.323	100	NA	NA	
Lane 3	460	-	460	7.6	1422	0.323	100	NA	NA	
Lane 4	-	27	27	3.7	139	0.194	100	0.0	3	
Approach	1375	27	1402	7.5		0.323				
North: Saint Kentigern										
Mov.	L2	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From N To Exit:	E	W								
Lane 1	57	-	57	3.5	544	0.105	100	NA	NA	

Lane 2	-	47	47	7.5	254	0.184	100	NA	NA
Lane 3	-	46	46	7.5	250	0.184	100	NA	NA
Approach	57	93	150	6.0		0.184			
West: Pakuranga Road (West)									
Mov. From W To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	N	E							
Lane 1	53	539	592	6.3	701	0.845	100	NA	NA
Lane 2	-	965	965	6.5	1141	0.845	100	NA	NA
Lane 3	-	965	965	6.5	1141	0.845	100	NA	NA
Approach	53	2468	2521	6.5		0.845			
Total %HV Deg. Satn (v/c)									
Intersection	4073	6.8		0.845					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
East Exit: Pakuranga Road (East)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											
North Exit: Saint Kentigern												
Merge Type: Not Applied												
Full Length Lane	1											
West Exit: Pakuranga Road (West)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											

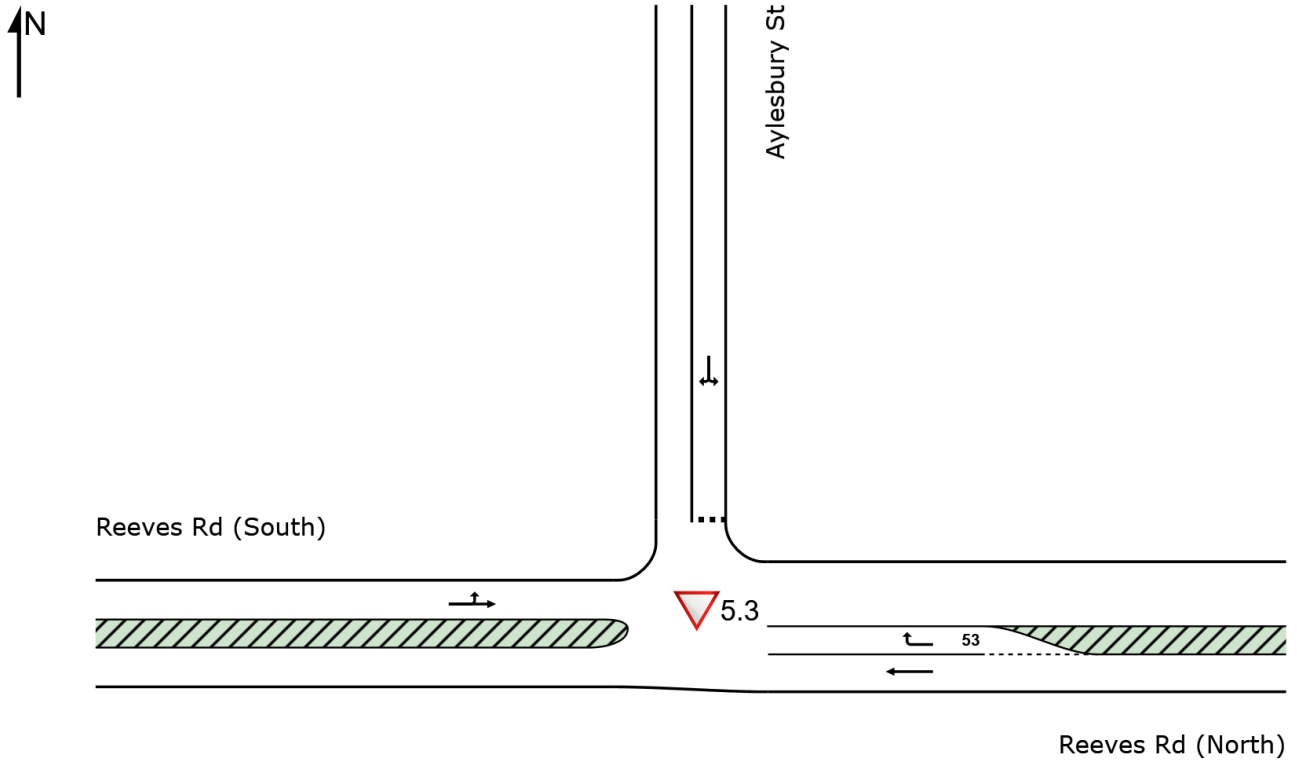
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SITE LAYOUT

▽ Site: 5.3 [5.3 Reeves Rd/ Aylesbury St (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 5.3 [5.3 Reeves Rd/ Aylesbury St (Site Folder: General)] Network: N101 [PM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
	veh/h	%	veh/h	%							m				
East: Reeves Rd (North)															
Lane 1	15	0.0	15	0.0	2021	0.007	100	0.0	LOS A	0.0	0.0	Full	60	0.0	0.0
Lane 2	10	0.0	10	0.0	1743	0.006	100	4.6	LOS A	0.0	0.1	Short	53	0.0	NA
Approach	25	0.0	25	0.0		0.007		1.8	NA	0.0	0.1				
North: Aylesbury St															
Lane 1	56	5.4	56	5.4	1284	0.044	100	0.3	LOS A	0.1	0.9	Full	193	0.0	0.0
Approach	56	5.4	56	5.4		0.044		0.3	LOS A	0.1	0.9				
West: Reeves Rd (South)															
Lane 1	38	2.6	38	2.6	1932	0.020	100	3.4	LOS A	0.0	0.0	Full	175	0.0	0.0
Approach	38	2.6	38	2.6		0.020		3.4	NA	0.0	0.0				
Intersection	119	3.4	119	3.4		0.044		1.6	NA	0.1	0.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
 Lane LOS values are based on average delay per lane.
 Minor Road Approach LOS values are based on average delay for all lanes.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Approach Lane Flows (veh/h)										
East: Reeves Rd (North)										
Mov.	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane
From E					veh/h	v/c	%	%	No.	
To Exit:	W	N								
Lane 1	15	-	15	0.0	2021	0.007	100	NA	NA	
Lane 2	-	10	10	0.0	1743	0.006	100	0.0	1	
Approach	15	10	25	0.0		0.007				
North: Aylesbury St										
Mov.	L2	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane
From N					veh/h	v/c	%	%	No.	
To Exit:	E	W								
Lane 1	26	30	56	5.4	1284	0.044	100	NA	NA	
Approach	26	30	56	5.4		0.044				
West: Reeves Rd (South)										
Mov.	L2	T1	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane
From W					veh/h	v/c	%	%	No.	
To Exit:	N	E								
Lane 1	28	10	38	2.6	1932	0.020	100	NA	NA	
Approach	28	10	38	2.6		0.020				

	Total	%HV	Deg.Satn (v/c)
Intersection	119	3.4	0.044

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: Reeves Rd (North) Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								
North Exit: Aylesbury St Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								
West Exit: Reeves Rd (South) Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								

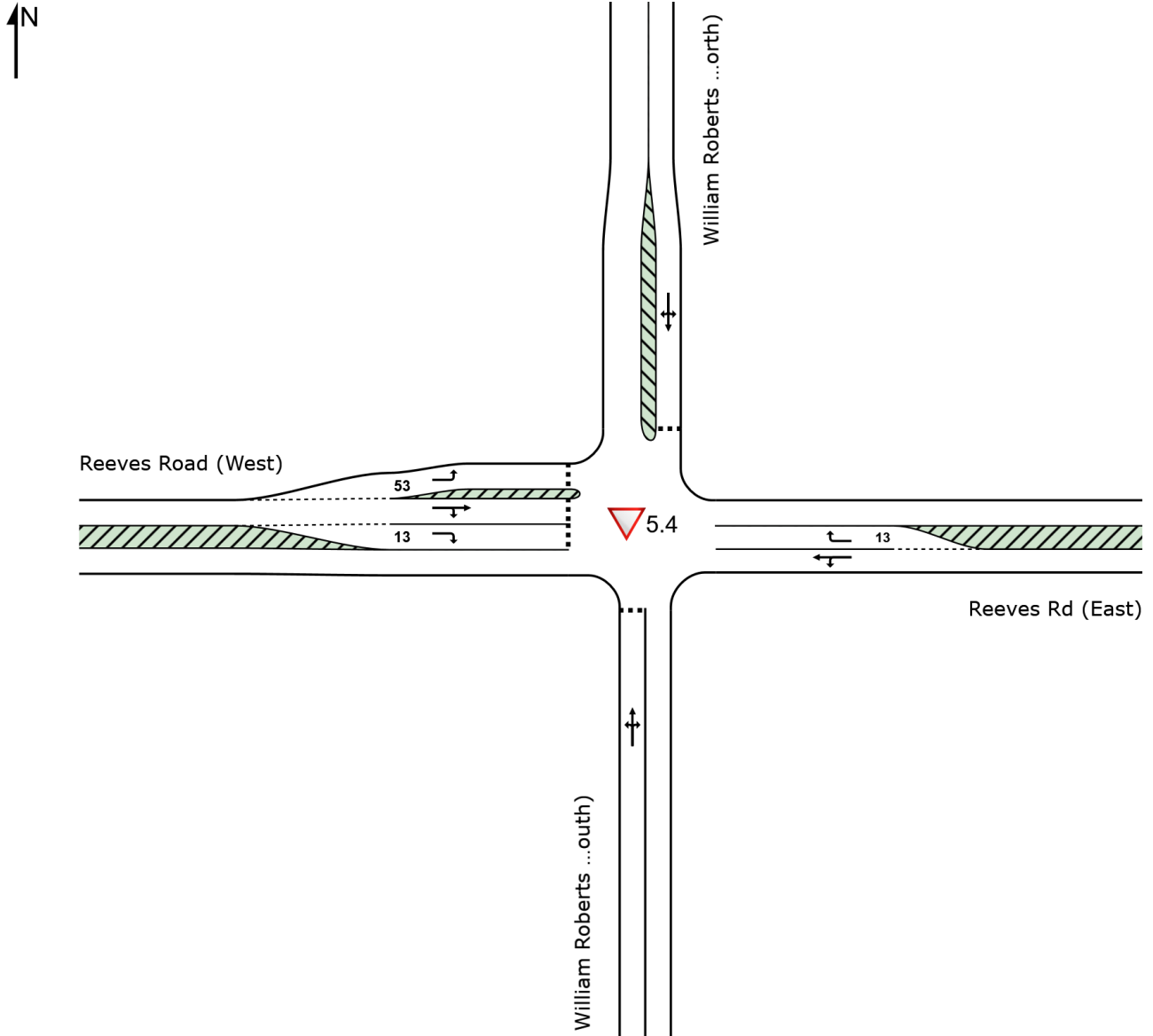
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SITE LAYOUT

▽ Site: 5.4 [5.4 Reeves Rd / William Roberts Rd - Import (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

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LANE SUMMARY

Site: 5.4 [5.4 Reeves Rd / William Roberts Rd - Import (Site Folder: General)] Network: N101 [PM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS [Total HV] veh/h %		ARRIVAL FLOWS [Total HV] veh/h %		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %	
South: William Roberts Rd (South)															
Lane 1	105	9.7	104	9.8	728	0.142	100	2.4	LOS A	0.2	1.8	Full	243	-37.2 ^{N7}	0.0
Approach	105	9.7	104 ^{N1}	9.8		0.142		2.4	LOS A	0.2	1.8				
East: Reeves Rd (East)															
Lane 1	101	10.9	101	10.9	1704	0.059	100	4.3	LOS A	0.0	0.0	Full	266	0.0	0.0
Lane 2	90	18.9	90	18.9	1611	0.056	100	4.7	LOS A	0.0	0.0	Short	13	0.0	NA
Approach	191	14.7	191	14.7		0.059		4.5	NA	0.0	0.0				
North: William Roberts Rd (North)															
Lane 1	51	2.0	50	2.0	1231	0.041	100	4.8	LOS A	0.1	0.7	Full	244	0.0	0.0
Approach	51	2.0	50	2.0		0.041		4.8	LOS A	0.1	0.7				
West: Reeves Road (West)															
Lane 1	11	0.0	11	0.0	713	0.015	100	4.8	LOS A	0.0	0.1	Short	53	-50.0 ^{N7}	NA
Lane 2	17	6.3	17	6.3	1265	0.013	100	3.6	LOS A	0.0	0.3	Full	60	0.0	0.0
Lane 3	11	0.0	11	0.0	1004	0.010	79 ⁵	5.1	LOS A	0.0	0.2	Short	13	0.0	NA
Approach	38	2.8	38	2.8		0.015		4.3	LOS A	0.0	0.3				
Intersection	384	10.5	383 ^{N1}	10.5		0.142		4.0	NA	0.2	1.8				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

⁵ Lane under-utilisation found by the program

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N7} The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)											
South: William Roberts Rd (South)											
Mov.	L2	T1	R2	Total	%HV	Cap.	Deg.	Lane	Prob.	Ov.	
From S						veh/h	Satn	Util.	SL	Ov.	Lane
To Exit:	W	N	E				v/c	%	%	%	No.
Lane 1	10	61	32	104	9.8	728	0.142	100	NA	NA	
Approach	10	61	32	104	9.8		0.142				
East: Reeves Rd (East)											
Mov.	L2	T1	R2	Total	%HV	Cap.	Deg.	Lane	Prob.	Ov.	
From E						veh/h	Satn	Util.	SL	Ov.	Lane
To Exit:	S	W	N				v/c	%	%	%	No.
Lane 1	90	11	-	101	10.9	1704	0.059	100	NA	NA	

Lane 2	-	-	90	90	18.9	1611	0.056	100	0.0	1
Approach	90	11	90	191	14.7		0.059			
North: William Roberts Rd (North)										
Mov. From N To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	E	S	W							
Lane 1	10	30	11	50	2.0	1231	0.041	100	NA	NA
Approach	10	30	11	50	2.0		0.041			
West: Reeves Road (West)										
Mov. From W To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	N	E	S							
Lane 1	11	-	-	11	0.0	713	0.015	100	0.0	2
Lane 2	-	17	-	17	6.3	1265	0.013	100	NA	NA
Lane 3	-	-	11	11	0.0	1004	0.010	79 ⁵	0.0	2
Approach	11	17	11	38	2.8		0.015			
Total %HV Deg.Satn (v/c)										
Intersection	383	10.5		0.142						

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

5 Lane under-utilisation found by the program

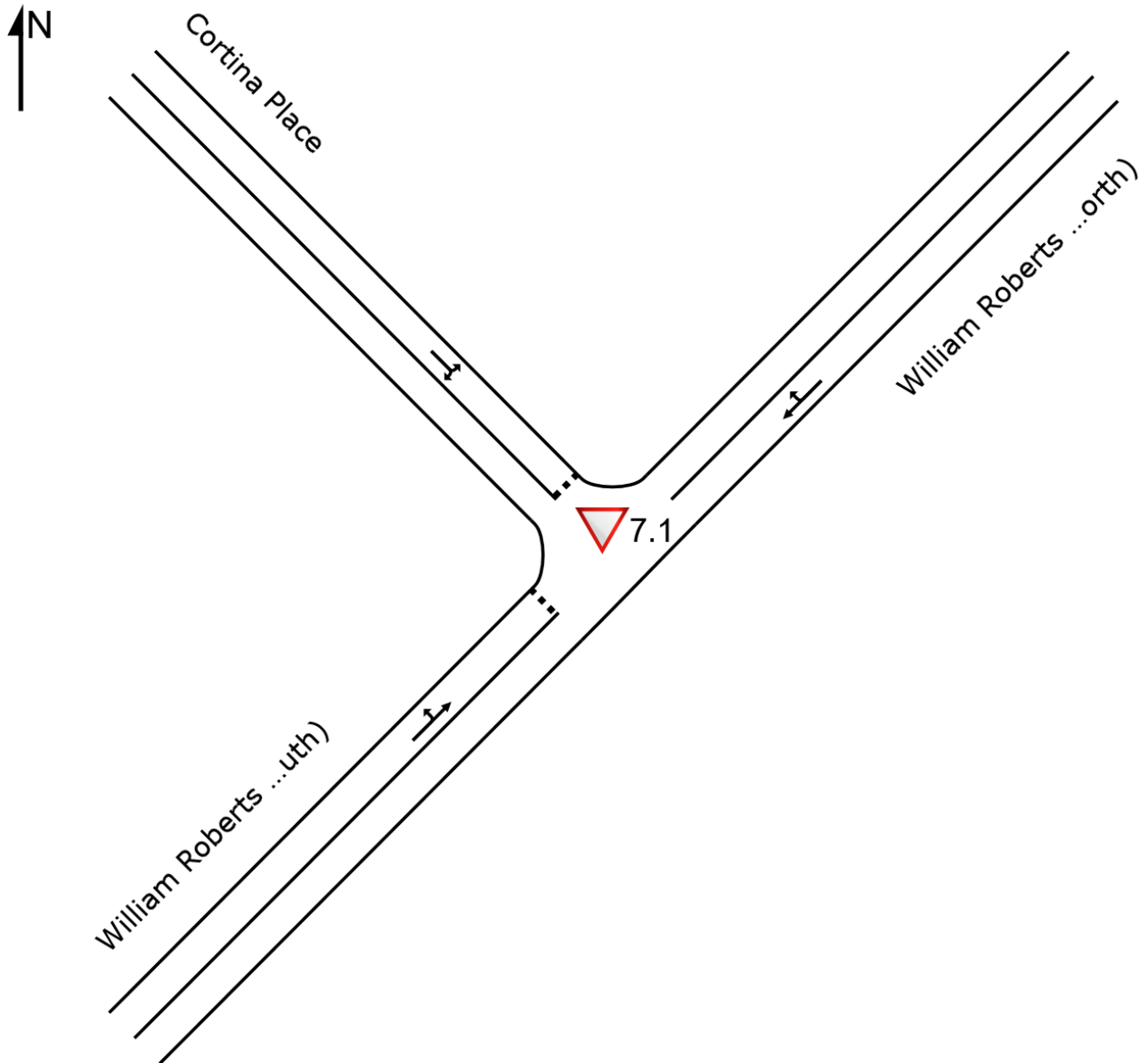
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate % veh/h	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: William Roberts Rd (South)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
East Exit: Reeves Rd (East)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
North Exit: William Roberts Rd (North)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
West Exit: Reeves Road (West)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.

SITE LAYOUT

▽ Site: 7.1 [7.1 William Roberts Rd / Cortina PI - Import (Site Folder: General)]

Scheme Design
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 7.1 [7.1 William Roberts Rd / Cortina PI - Import (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

Scheme Design
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS [Total HV] veh/h %		ARRIVAL FLOWS [Total HV] veh/h %		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %	
NorthEast: William Roberts Road (North)															
Lane 1	116	5.2	116	5.2	1854	0.063	100	0.9	LOS A	0.0	0.0	Full	243	0.0	0.0
Approach	116	5.2	116	5.2		0.063		0.9	NA	0.0	0.0				
NorthWest: Cortina Place															
Lane 1	65	7.7	65	7.7	1072	0.061	100	4.0	LOS A	0.2	1.2	Full	140	0.0	0.0
Approach	65	7.7	65	7.7		0.061		4.0	LOS A	0.2	1.2				
SouthWest: William Roberts Road (South)															
Lane 1	276	8.4	273	8.4	1372	0.199	100	3.6	LOS A	0.6	4.6	Full	110	0.0	0.0
Approach	276	8.4	273 ^{N1}	8.4		0.199		3.6	LOS A	0.6	4.6				
Intersection	457	7.5	453 ^{N1}	7.5		0.199		3.0	NA	0.6	4.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab). Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)										
NorthEast: William Roberts Road (North)										
Mov. From NE To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SW	NW								
Lane 1	91	25	116	5.2	1854	0.063	100	NA	NA	
Approach	91	25	116	5.2		0.063				
NorthWest: Cortina Place										
Mov. From NW To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	NE	SW								
Lane 1	45	20	65	7.7	1072	0.061	100	NA	NA	
Approach	45	20	65	7.7		0.061				
SouthWest: William Roberts Road (South)										
Mov. From SW To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	NW	NE								
Lane 1	29	244	273	8.4	1372	0.199	100	NA	NA	
Approach	29	244	273	8.4		0.199				
Total %HV Deg. Satn (v/c)										

Intersection	453	7.5	0.199
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Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
NorthEast Exit: William Roberts Road (North) Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
NorthWest Exit: Cortina Place Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
SouthWest Exit: William Roberts Road (South) Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.

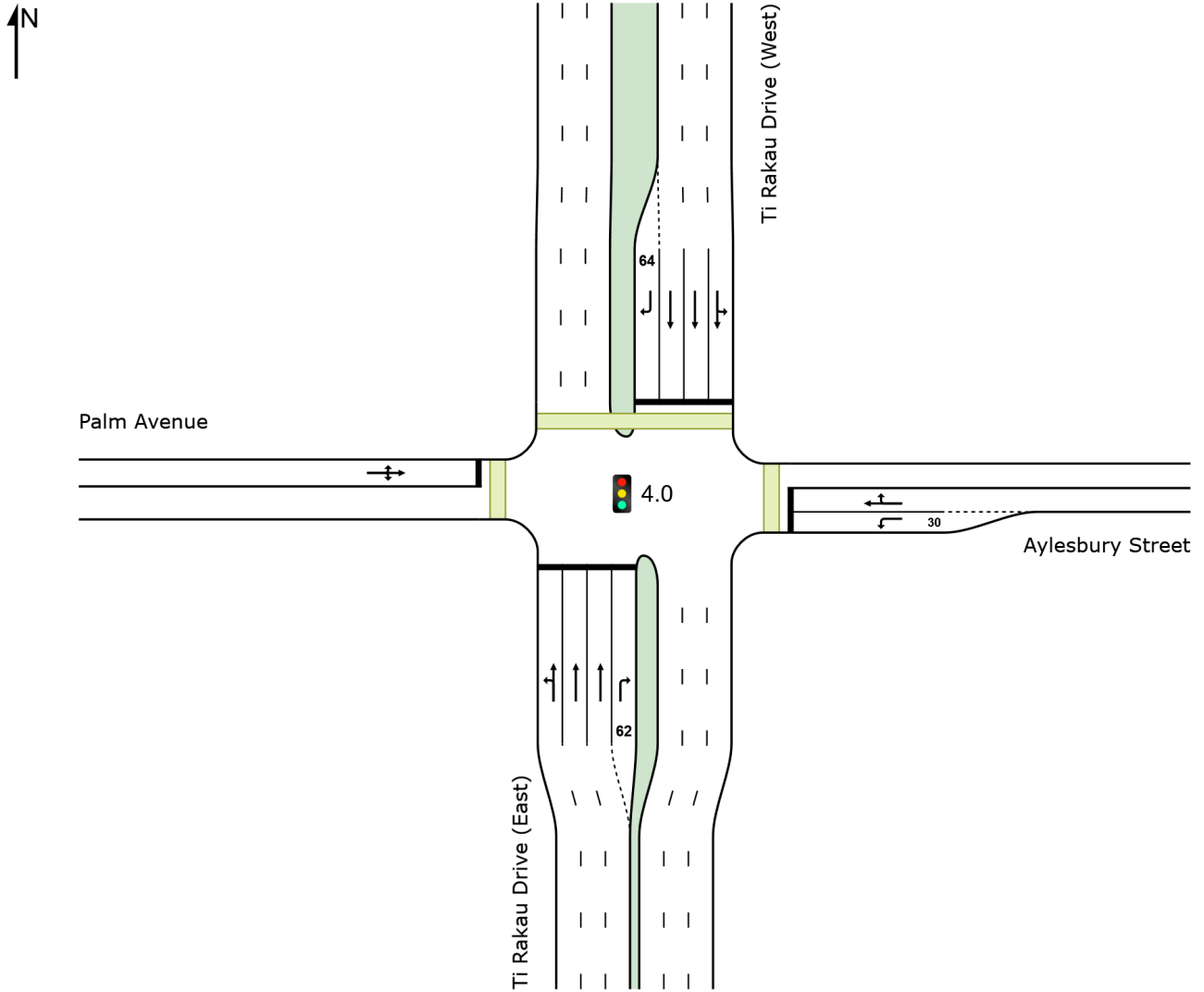
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 Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.2\CS 1.2 PM -V1.sip9

SITE LAYOUT

Site: 4.0 [4.0 Palm Ave / Aylesbury St - Import (Site Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.2\CS 1.2 PM -V1.sip9

LANE SUMMARY

Site: 4.0 [4.0 Palm Ave / Aylesbury St - Import (Site Folder: General)] Network: N101 [PM (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total HV]	%	[Total HV]	%						[Veh]	Dist] m				
South: Ti Rakau Drive (East)															
Lane 1	595	4.9	585	4.9	1112	0.526	100	20.4	LOS C	20.5	149.5	Full	110	0.0	43.2
Lane 2	620	5.1	609	5.1	1158	0.526	100	18.2	LOS B	20.7	151.5	Full	110	0.0	44.5
Lane 3	611	5.1	601	5.1	1143 ¹	0.526	100	18.1	LOS B	20.3	148.4	Full	110	0.0	42.6
Lane 4	10	0.0	10	0.0	164	0.060	100	71.3	LOS E	0.6	4.2	Short	62	0.0	NA
Approach	1836	5.0	1805 ^{N1}	5.0		0.526		19.2	LOS B	20.7	151.5				
East: Aylesbury Street															
Lane 1	27	3.7	27	3.7	111	0.242	100	53.4	LOS D	1.5	11.1	Short	30	-50.0 ^{N3}	NA
Lane 2	21	4.8	21	4.8	69	0.303	100	81.6	LOS F	1.4	10.4	Full	40	0.0	0.0
Approach	48	4.2	48	4.2		0.303		65.8	LOS E	1.5	11.1				
North: Ti Rakau Drive (West)															
Lane 1	417	7.6	396	7.7	576	0.687	100	20.7	LOS C	16.0	119.8	Full	174	-49.4 ^{N3}	0.0
Lane 2	411	7.7	391	7.9	569	0.687	100	21.2	LOS C	16.0	119.7	Full	174	-50.0 ^{N3}	0.0
Lane 3	397	7.7	378	7.9	550 ¹	0.687	100	20.7	LOS C	15.0	112.5	Full	174	-50.0 ^{N3}	0.0
Lane 4	43	7.0	41	7.1	157	0.261	100	73.7	LOS E	2.6	19.0	Short	64	0.0	NA
Approach	1268	7.6	1205 ^{N1}	7.8		0.687		22.7	LOS C	16.0	119.8				
West: Palm Avenue															
Lane 1	95	4.2	95	4.2	112	0.848	100	88.8	LOS F	7.0	50.7	Full	87	-30.1 ^{N3}	0.0
Approach	95	4.2	95	4.2		0.848		88.8	LOS F	7.0	50.7				
Intersection	3247	6.0	3153 ^{N1}	6.2		0.848		23.3	LOS C	20.7	151.5				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

Approach Lane Flows (veh/h)										
South: Ti Rakau Drive (East)										
Mov. From S To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	W	N	E							
Lane 1	63	522	-	585	4.9	1112	0.526	100	NA	NA
Lane 2	-	609	-	609	5.1	1158	0.526	100	NA	NA
Lane 3	-	601	-	601	5.1	1143 ¹	0.526	100	NA	NA
Lane 4	-	-	10	10	0.0	164	0.060	100	0.0	3

Approach	63	1732	10	1805	5.0		0.526				
East: Aylesbury Street											
Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	
From E						Cap.	Satn	Util.	SL	Ov.	Lane
To Exit:	S	W	N			veh/h	v/c	%	%	%	No.
Lane 1	27	-	-	27	3.7	111	0.242	100	0.0	2	
Lane 2	-	10	11	21	4.8	69	0.303	100	NA	NA	
Approach	27	10	11	48	4.2		0.303				
North: Ti Rakau Drive (West)											
Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	
From N						Cap.	Satn	Util.	SL	Ov.	Lane
To Exit:	E	S	W			veh/h	v/c	%	%	%	No.
Lane 1	9	386	-	396	7.7	576	0.687	100	NA	NA	
Lane 2	-	391	-	391	7.9	569	0.687	100	NA	NA	
Lane 3	-	378	-	378	7.9	550 ¹	0.687	100	NA	NA	
Lane 4	-	-	41	41	7.1	157	0.261	100	0.0	3	
Approach	9	1155	41	1205	7.8		0.687				
West: Palm Avenue											
Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	
From W						Cap.	Satn	Util.	SL	Ov.	Lane
To Exit:	N	E	S			veh/h	v/c	%	%	%	No.
Lane 1	44	10	41	95	4.2	112	0.848	100	NA	NA	
Approach	44	10	41	95	4.2		0.848				
Total %HV Deg. Satn (v/c)											
Intersection	3153	6.2		0.848							

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- ¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

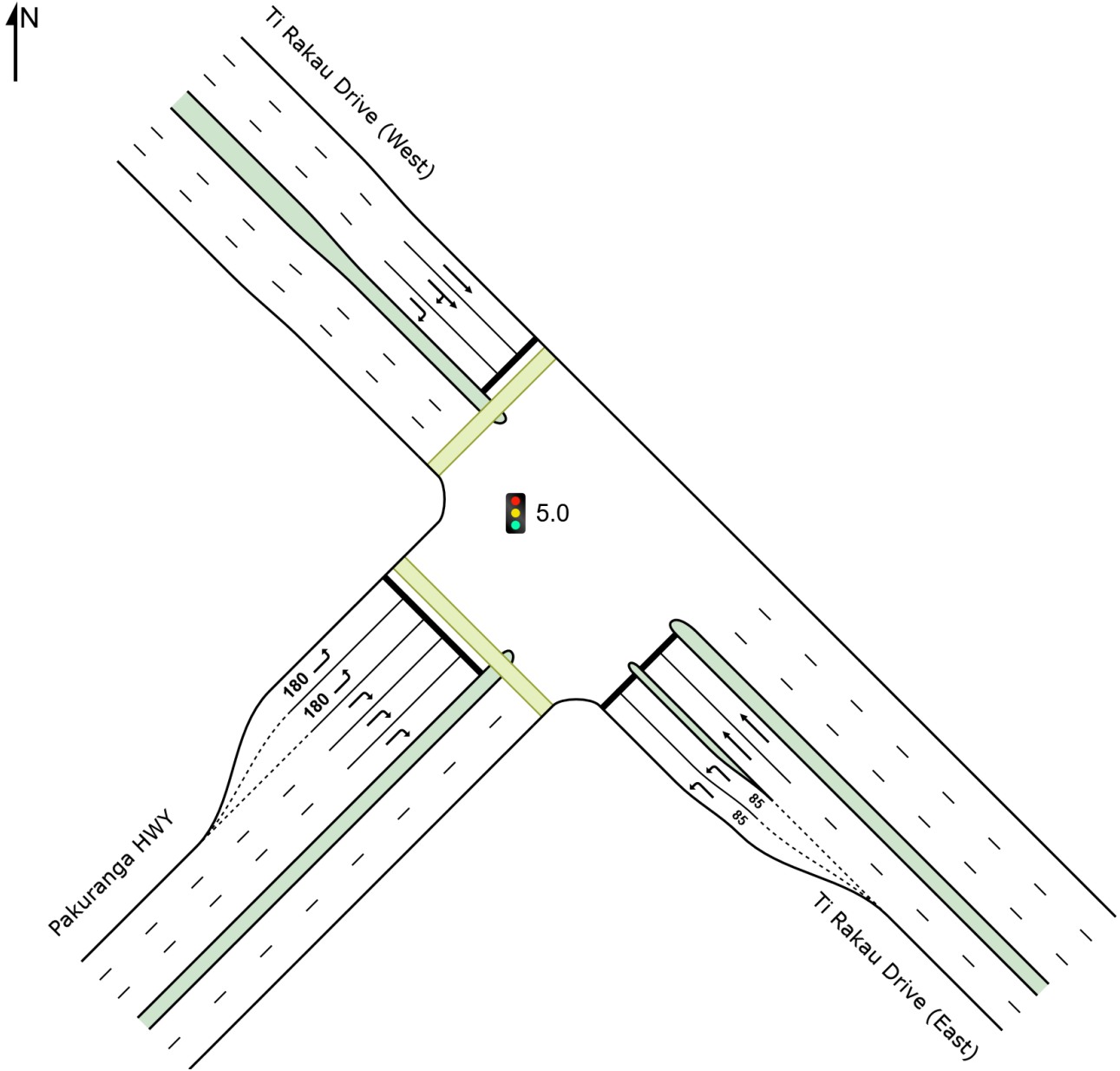
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
South Exit: Ti Rakau Drive (East) Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
Full Length Lane	2		Merge Analysis not applied.									
Full Length Lane	3		Merge Analysis not applied.									
East Exit: Aylesbury Street Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
North Exit: Ti Rakau Drive (West) Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
Full Length Lane	2		Merge Analysis not applied.									
Full Length Lane	3		Merge Analysis not applied.									
West Exit: Palm Avenue Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									

SITE LAYOUT

Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.2\CS 1.2 PM -V1.sip9

LANE SUMMARY

Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV %	[Total veh/h	HV %						[Veh	Dist] m				
SouthEast: Ti Rakau Drive (East)															
Lane 1	420	7.7	402	7.5	1139	0.353	100	16.5	LOS B	11.4	84.9	Short	85	0.0	NA
Lane 2	420	7.7	402	7.5	1139	0.353	100	16.5	LOS B	11.4	84.9	Short	85	0.0	NA
Lane 3	360	5.7	345	5.6	350 ¹	0.985	100	105.5	LOS F	18.1 ^{N4}	133.0 ^{N4}	Full	91	-43.2 ^{N3}	50.0
Lane 4	401	5.7	385	5.6	391	0.985	100	106.6	LOS F	18.1 ^{N4}	133.0 ^{N4}	Full	91	-44.5 ^{N3}	50.0
Approach	1601	6.7	1534 ^{N1}	6.6		0.985		59.1	LOS E	18.1	133.0				
NorthWest: Ti Rakau Drive (West)															
Lane 1	441	9.0	421	9.2	473	0.890	100	69.7	LOS E	21.3 ^{N4}	160.7 ^{N4}	Full	110	0.0	50.0
Lane 2	433	6.9	413	7.0	464	0.890	100	74.1	LOS E	21.7 ^{N4}	160.7 ^{N4}	Full	110	0.0	50.0
Lane 3	420	6.7	401	6.8	451	0.890	100	74.9	LOS E	21.7 ^{N4}	160.7 ^{N4}	Full	110	0.0	50.0
Approach	1295	7.6	1236 ^{N1}	7.7		0.890		72.8	LOS E	21.7	160.7				
SouthWest: Pakuranga HWY															
Lane 1	540	4.7	540	4.7	560	0.965	100	90.2	LOS F	48.4	352.6	Short	180	-43.2 ^{N3}	NA
Lane 2	528	4.7	528	4.7	547	0.965	100	90.8	LOS F	47.5	345.9	Short	180	-44.5 ^{N3}	NA
Lane 3	329	5.7	329	5.7	426	0.771	100	66.6	LOS E	20.7	151.6	Full	1650	0.0	0.0
Lane 4	329	5.7	329	5.7	426	0.771	100	66.6	LOS E	20.7	151.6	Full	1650	0.0	0.0
Lane 5	332	5.7	332	5.7	431	0.771	100	66.6	LOS E	20.9	153.0	Full	1650	0.0	0.0
Approach	2057	5.2	2057	5.2		0.965		79.0	LOS E	48.4	352.6				
Intersection	4953	6.3	4827 ^{N1}	6.5		0.985		71.1	LOS E	48.4	352.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)										
SouthEast: Ti Rakau Drive (East)										
Mov. From SE To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SW	NW								
Lane 1	402	-	402	7.5	1139	0.353	100	14.9	2	
Lane 2	402	-	402	7.5	1139	0.353	100	14.9	3	
Lane 3	-	345	345	5.6	350 ¹	0.985	100	NA	NA	
Lane 4	-	385	385	5.6	391	0.985	100	NA	NA	

Approach	804	730	1534	6.6		0.985				
NorthWest: Ti Rakau Drive (West)										
Mov. From NW To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.	
	SE	SW								
Lane 1	421	-	421	9.2	473	0.890	100	NA	NA	
Lane 2	37	376	413	7.0	464	0.890	100	NA	NA	
Lane 3	-	401	401	6.8	451	0.890	100	NA	NA	
Approach	459	778	1236	7.7		0.890				
SouthWest: Pakuranga HWY										
Mov. From SW To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.	
	NW	SE								
Lane 1	540	-	540	4.7	560	0.965	100	78.0	2	
Lane 2	528	-	528	4.7	547	0.965	100	78.0	4	
Lane 3	-	329	329	5.7	426	0.771	100	NA	NA	
Lane 4	-	329	329	5.7	426	0.771	100	NA	NA	
Lane 5	-	332	332	5.7	431	0.771	100	NA	NA	
Approach	1068	989	2057	5.2		0.965				
Total %HV Deg. Satn (v/c)										
Intersection	4827	6.5		0.985						

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- 1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

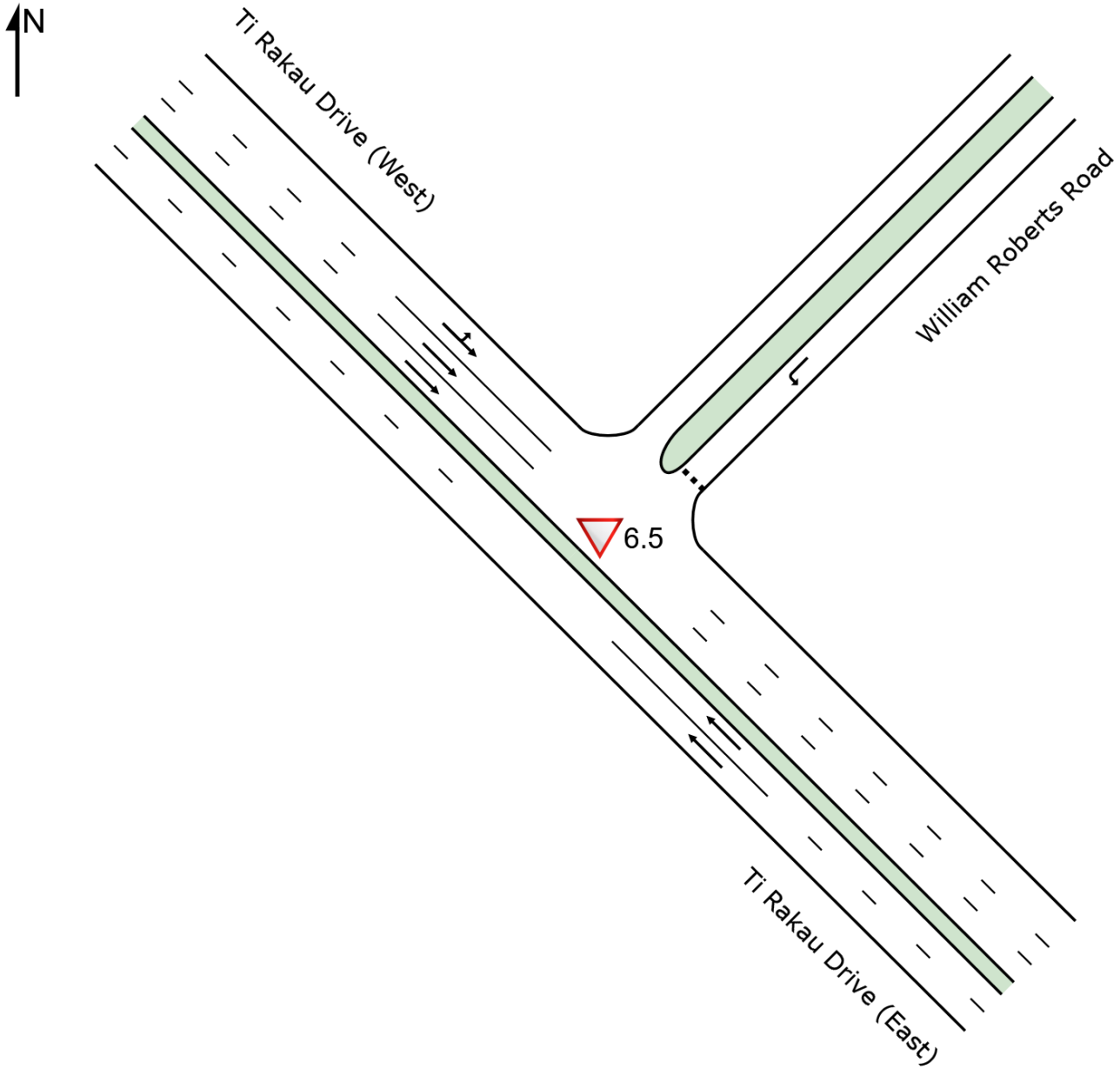
Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
SouthEast Exit: Ti Rakau Drive (East)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
Full Length Lane	2										Merge Analysis not applied.
Full Length Lane	3										Merge Analysis not applied.
NorthWest Exit: Ti Rakau Drive (West)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
Full Length Lane	2										Merge Analysis not applied.
Full Length Lane	3										Merge Analysis not applied.
SouthWest Exit: Pakuranga HWY											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
Full Length Lane	2										Merge Analysis not applied.

SITE LAYOUT

▽ Site: 6.5 [6.5 William Roberts Rd / Ti Rakau Dr - Import (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandenneever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.2\CS 1.2 PM -V1.sip9

LANE SUMMARY

Site: 6.5 [6.5 William Roberts Rd / Ti Rakau Dr - Import (Site Folder: General)] Network: N101 [PM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]						[Veh]	[Dist m]				
SouthEast: Ti Rakau Drive (East)															
Lane 1	835	6.4	799	6.2	1826	0.437	100	0.0	LOS A	0.0	0.0	Full	18	0.0	0.0
Lane 2	826	6.4	790	6.2	1806	0.437	100	0.0	LOS A	0.0	0.0	Full	18	0.0	0.0
Approach	1661	6.4	1589 ^{N1}	6.2		0.437		0.0	NA	0.0	0.0				
NorthEast: William Roberts Road															
Lane 1	110	3.6	110	3.6	487	0.226	100	3.4	LOS A	1.4 ^{N5}	9.9 ^{N5}	Full	110	-50.0 ^{N3}	0.0
Approach	110	3.6	110	3.6		0.226		3.4	LOS A	1.4	9.9				
NorthWest: Ti Rakau Drive (West)															
Lane 1	567	7.3	559	7.3	1869	0.299	100	2.3	LOS A	4.5 ^{N5}	33.1 ^{N5}	Full	97	0.0	13.8
Lane 2	548	6.2	540	6.3	1805	0.299	100	0.0	LOS A	4.4 ^{N5}	32.7 ^{N5}	Full	97	0.0	0.0
Lane 3	347	6.2	342	6.3	1143	0.299	100	0.0	LOS A	0.0	0.0	Full	97	-36.7 ^{N3}	0.0
Approach	1461	6.7	1441 ^{N1}	6.7		0.299		0.9	NA	4.5	33.1				
Intersection	3232	6.4	3140 ^{N1}	6.6		0.437		0.5	NA	4.5	33.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
 Lane LOS values are based on average delay per lane.
 Minor Road Approach LOS values are based on average delay for all lanes.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

- N1** Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
- N3** Capacity Adjustment due to downstream lane blockage determined by the program.
- N5** Continuous Lane results determined by Back of Queue values of downstream lanes (proportional to lane movement flows).

Approach Lane Flows (veh/h)									
SouthEast: Ti Rakau Drive (East)									
Mov. From SE To Exit:	T1	Total	%HV		Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	NW			Cap. veh/h					
Lane 1	799	799	6.2	1826	0.437	100	NA	NA	
Lane 2	790	790	6.2	1806	0.437	100	NA	NA	
Approach	1589	1589	6.2		0.437				
NorthEast: William Roberts Road									
Mov. From NE To Exit:	L2	Total	%HV		Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SE			Cap. veh/h					
Lane 1	110	110	3.6	487	0.226	100	NA	NA	
Approach	110	110	3.6		0.226				
NorthWest: Ti Rakau Drive (West)									

Mov. From NW To Exit:	L2 NE	T1 SE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	272	287	559	7.3	1869	0.299	100	NA	NA
Lane 2	-	540	540	6.3	1805	0.299	100	NA	NA
Lane 3	-	342	342	6.3	1143	0.299	100	NA	NA
Approach	272	1169	1441	6.7		0.299			
Total %HV Deg.Satn (v/c)									
Intersection	3140	6.6		0.437					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

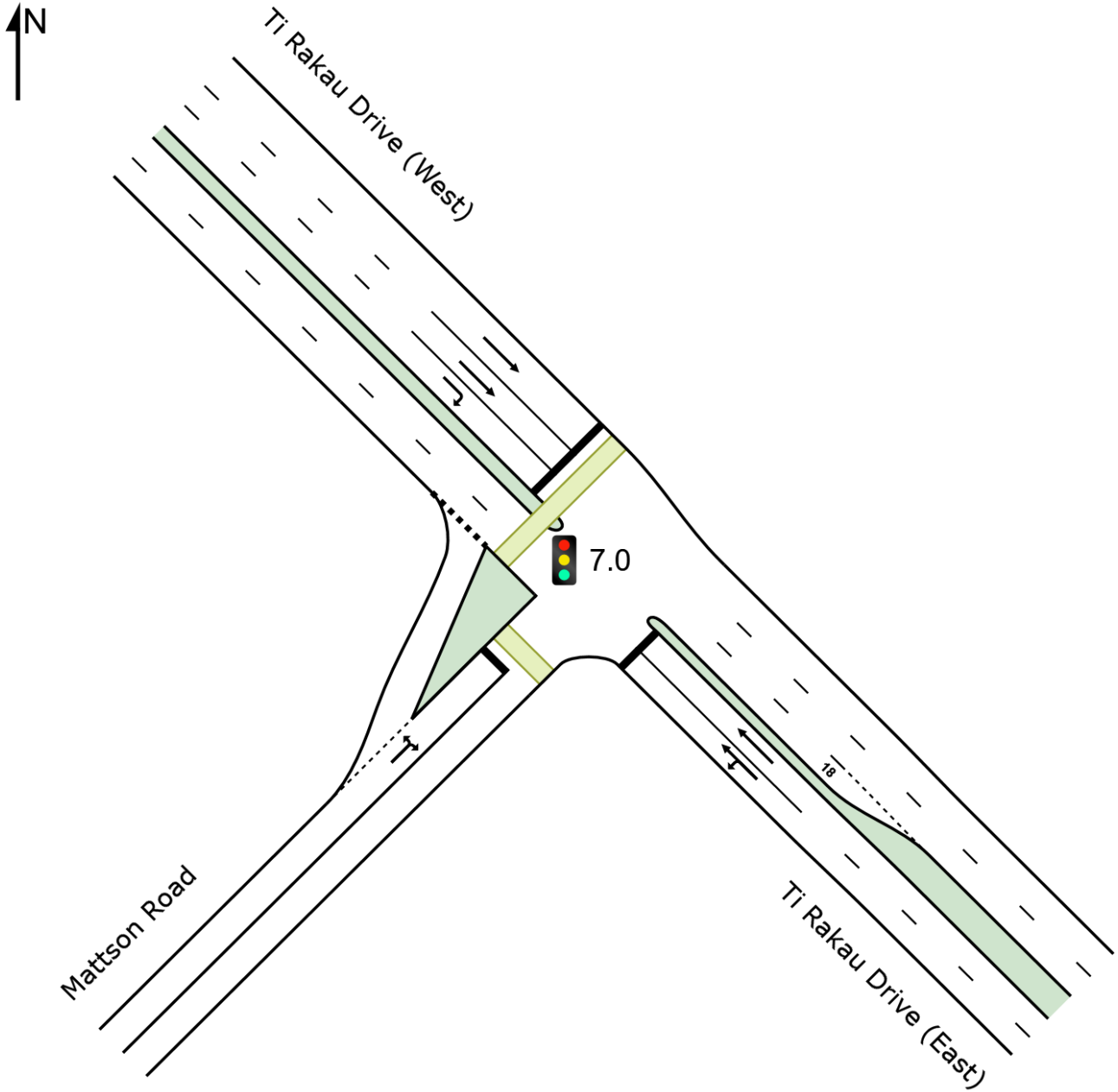
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec		
SouthEast Exit: Ti Rakau Drive (East)												
Merge Type: Not Applied												
Full Length Lane	1										Merge Analysis not applied.	
Full Length Lane	2										Merge Analysis not applied.	
Full Length Lane	3										Merge Analysis not applied.	
NorthEast Exit: William Roberts Road												
Merge Type: Not Applied												
Full Length Lane	1										Merge Analysis not applied.	
NorthWest Exit: Ti Rakau Drive (West)												
Merge Type: Not Applied												
Full Length Lane	1										Merge Analysis not applied.	
Full Length Lane	2										Merge Analysis not applied.	

SITE LAYOUT

 Site: 7.0 [7.0 Mattson Rd/ Ti Rakau Dr (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 7.0 [7.0 Mattson Rd/ Ti Rakau Dr (Site Folder: General)] Network: N101 [PM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 69 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
SouthEast: Ti Rakau Drive (East)															
Lane 1	837	6.6	800	6.4	908	0.881	100	27.5	LOS C	27.7	204.7	Full	187	0.0	23.2
Lane 2	845	6.5	807	6.3	916	0.881	100	27.4	LOS C	27.9	205.8	Full	187	0.0	23.7
Approach	1682	6.5	1607 ^N	6.4		0.881		27.4	LOS C	27.9	205.8				
NorthWest: Ti Rakau Drive (West)															
Lane 1	618	6.0	610	6.0	1325	0.461	100	5.5	LOS A	3.6 ^{N4}	26.3 ^{N4}	Full	18	0.0	50.0
Lane 2	580	6.0	573	6.0	1245	0.461	100	5.5	LOS A	3.6 ^{N4}	26.3 ^{N4}	Full	18	0.0	50.0
Lane 3	97	6.2	96	6.2	151	0.633	100	38.7	LOS D	3.1	22.8	Full	18	0.0	36.7
Approach	1295	6.0	1280 ^N	6.1		0.633		8.0	LOS A	3.6	26.3				
SouthWest: Mattson Road															
Lane 1	71	1.4	71	1.4	399	0.178	100	24.4	LOS C	1.7	12.3	Full	282	0.0	0.0
Approach	71	1.4	71	1.4		0.178		24.4	LOS C	1.7	12.3				
Intersection	3048	6.2	2958 ^N	6.4		0.881		18.9	LOS B	27.9	205.8				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)										
SouthEast: Ti Rakau Drive (East)										
Mov.	L2	T1	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From SE To Exit:	SW	NW			veh/h	v/c	%	%		
Lane 1	42	758	800	6.4	908	0.881	100	NA	NA	
Lane 2	-	807	807	6.3	916	0.881	100	NA	NA	
Approach	42	1565	1607	6.4		0.881				
NorthWest: Ti Rakau Drive (West)										
Mov.	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From NW To Exit:	SE	SW			veh/h	v/c	%	%		
Lane 1	610	-	610	6.0	1325	0.461	100	NA	NA	
Lane 2	573	-	573	6.0	1245	0.461	100	NA	NA	
Lane 3	-	96	96	6.2	151	0.633	100	NA	NA	
Approach	1184	96	1280	6.1		0.633				
SouthWest: Mattson Road										
Mov.	L2	R2	Total	%HV	Deg.	Lane Util.	Prob.	Ov.		

From SW To Exit:	NW	SE			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	23	48	71	1.4	399	0.178	100	NA	NA
Approach	23	48	71	1.4		0.178			
Total %HV Deg. Satn (v/c)									
Intersection	2958	6.4		0.881					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East)												
Merge Type: Priority												
Exit Short Lane	3	18	0.0	573	591	3.00	2.00	48	1191	0.040	1.1	1.2
Merge Lane	2	-	100.0	Merge Lane is not Opposed				573	1800	0.319	0.0	0.0
NorthWest Exit: Ti Rakau Drive (West)												
Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
SouthWest Exit: Mattson Road												
Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										

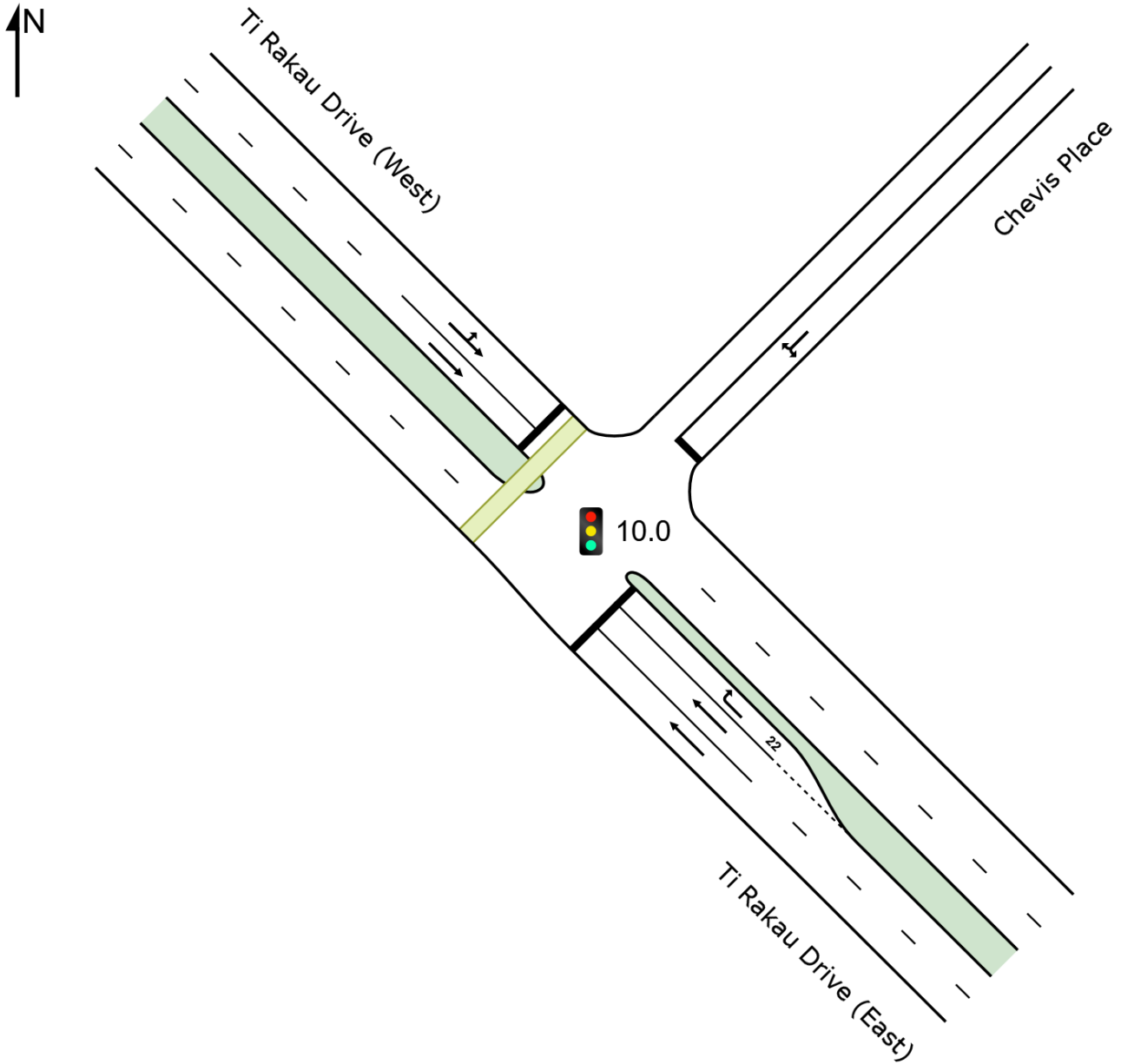
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 Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.2\CS 1.2 PM -V1.sip9

SITE LAYOUT

Site: 10.0 [10.0 Edgewater Dr (West) / Chevis Pl (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandenneever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.2\CS 1.2 PM -V1.sip9

LANE SUMMARY

Site: 10.0 [10.0 Edgewater Dr (West) / Chevis Pl (Site Folder: **Network: N101 [PM (Network General)]** Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 64 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
SouthEast: Ti Rakau Drive (East)															
Lane 1	814	6.4	810	6.4	916	0.884	100	27.0	LOS C	26.5	196.1	Full	162	0.0	32.5
Lane 2	793	6.4	789	6.4	893 ¹	0.884	100	27.2	LOS C	25.8	190.7	Full	162	0.0	29.9
Lane 3	10	0.0	10	0.0	250	0.040	100	31.0	LOS C	0.2	1.7	Short	22	0.0	NA
Approach	1617	6.4	1608 ^N	6.4		0.884		27.1	LOS C	26.5	196.1				
NorthEast: Chevis Place															
Lane 1	20	0.0	20	0.0	230	0.087	100	32.5	LOS C	0.5	3.6	Full	138	0.0	0.0
Approach	20	0.0	20	0.0		0.087		32.5	LOS C	0.5	3.6				
NorthWest: Ti Rakau Drive (West)															
Lane 1	535	2.7	518	2.5	952	0.544	100	12.6	LOS B	10.2	73.1	Full	68	0.0	21.6
Lane 2	506	2.7	490	2.6	900	0.544	100	12.6	LOS B	9.7	69.3	Full	68	0.0	16.7
Approach	1041	2.7	1008 ^N	2.6		0.544		12.6	LOS B	10.2	73.1				
Intersection	2678	4.9	2636 ^N	5.0		0.884		21.6	LOS C	26.5	196.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)										
SouthEast: Ti Rakau Drive (East)										
Mov.	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov.
From SE					veh/h	v/c	%	%	Lane No.	
To Exit:	NW	NE								
Lane 1	810	-	810	6.4	916	0.884	100	NA	NA	
Lane 2	789	-	789	6.4	893 ¹	0.884	100	NA	NA	
Lane 3	-	10	10	0.0	250	0.040	100	0.0	2	
Approach	1598	10	1608	6.4		0.884				
NorthEast: Chevis Place										
Mov.	L2	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov.
From NE					veh/h	v/c	%	%	Lane No.	
To Exit:	SE	NW								
Lane 1	10	10	20	0.0	230	0.087	100	NA	NA	
Approach	10	10	20	0.0		0.087				
NorthWest: Ti Rakau Drive (West)										
Mov.	L2	T1	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov.
From NW					veh/h	v/c	%	%	Lane No.	
To Exit:	SE	NW								
Lane 1	10	10	20	0.0	230	0.087	100	NA	NA	
Approach	10	10	20	0.0		0.087				

From NW To Exit:	NE	SE			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	10	509	518	2.5	952	0.544	100	NA	NA
Lane 2	-	490	490	2.6	900	0.544	100	NA	NA
Approach	10	998	1008	2.6		0.544			
Total		%HV Deg. Satn (v/c)							
Intersection	2636	5.0		0.884					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- 1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

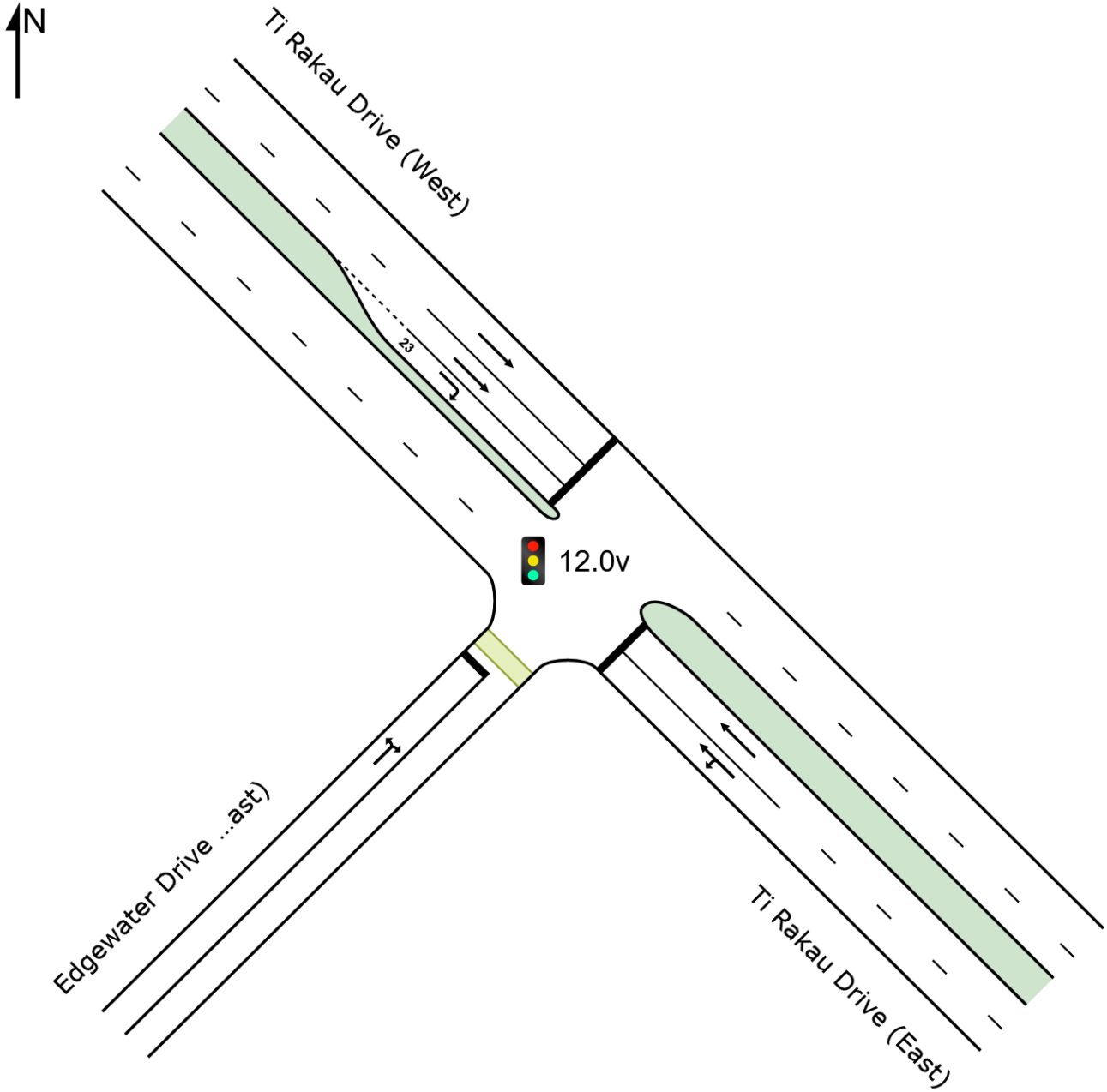
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
SouthEast Exit: Ti Rakau Drive (East)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.
NorthEast Exit: Chevis Place												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
NorthWest Exit: Ti Rakau Drive (West)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.

SITE LAYOUT

Site: 12.0v [12.0 Edgewater Dr (East) / Ti Rakau Dr - Conversion (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandenneever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.2\CS 1.2 PM -V1.sip9

LANE SUMMARY

Site: 12.0v [12.0 Edgewater Dr (East) / Ti Rakau Dr - Conversion (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 67 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
	veh/h	%	veh/h	%	veh/h	v/c	%	sec		Dist]	m		m	%	%
SouthEast: Ti Rakau Drive (East)															
Lane 1	908	6.5	904	6.5	1013	0.892	100	27.7	LOS C	31.1	229.8	Full	479	0.0	0.0
Lane 2	936	6.4	932	6.4	1044	0.892	100	26.4	LOS C	31.8	235.1	Full	479	0.0	0.0
Approach	1845	6.5	1836 ^N ₁	6.5		0.892		27.1	LOS C	31.8	235.1				
NorthWest: Ti Rakau Drive (West)															
Lane 1	532	2.6	517	2.6	1109	0.466	100	9.7	LOS A	9.1	65.3	Full	103	0.0	0.0
Lane 2	421	2.6	410	2.6	878 ¹	0.466	100	9.3	LOS A	6.9	49.2	Full	103	0.0	0.0
Lane 3	86	7.3	83	6.4	152	0.549	100	40.1	LOS D	2.6	18.9	Short	23	0.0	NA
Approach	1039	3.0	1010 ^N ₁	2.9		0.549		12.0	LOS B	9.1	65.3				
SouthWest: Edgewater Drive (East)															
Lane 1	157	6.7	157	6.7	251	0.624	100	36.7	LOS D	4.6	34.4	Full	500	0.0	0.0
Approach	157	6.7	157	6.7		0.624		36.7	LOS D	4.6	34.4				
Intersection	3041	5.3	3003 ^N ₁	5.4		0.892		22.5	LOS C	31.8	235.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)										
SouthEast: Ti Rakau Drive (East)										
Mov.	L2	T1	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane No.	
From SE					veh/h	v/c	%	%		
To Exit:	SW	NW								
Lane 1	153	751	904	6.5	1013	0.892	100	NA	NA	
Lane 2	-	932	932	6.4	1044	0.892	100	NA	NA	
Approach	153	1683	1836	6.5		0.892				
NorthWest: Ti Rakau Drive (West)										
Mov.	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane No.	
From NW					veh/h	v/c	%	%		
To Exit:	SE	SW								
Lane 1	517	-	517	2.6	1109	0.466	100	NA	NA	
Lane 2	410	-	410	2.6	878 ¹	0.466	100	NA	NA	
Lane 3	-	83	83	6.4	152	0.549	100	0.0	2	
Approach	927	83	1010	2.9		0.549				
SouthWest: Edgewater Drive (East)										

Mov. From SW To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	102	55	157	6.7	251	0.624	100	NA	NA
Approach	102	55	157	6.7		0.624			
Total %HV Deg. Satn (v/c)									
Intersection	3003	5.4		0.892					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- 1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East) Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.
NorthWest Exit: Ti Rakau Drive (West) Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.
SouthWest Exit: Edgewater Drive (East) Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.

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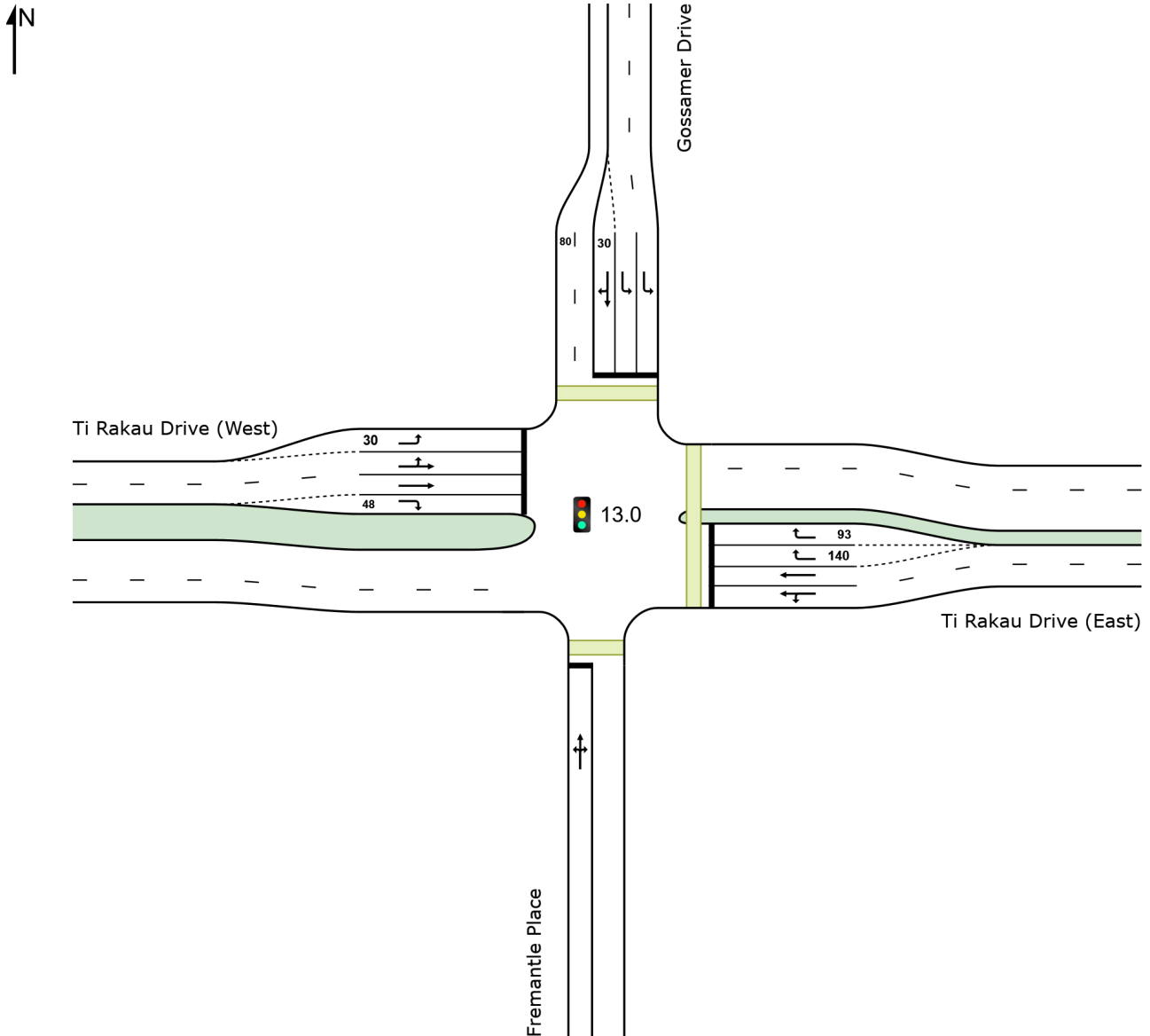
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SITE LAYOUT

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: General)]

Scheme Design
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

Scheme Design

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS [Total HV] veh/h %		ARRIVAL FLOWS [Total HV] veh/h %		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh Dist] m		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Fremantle Place															
Lane 1	40	5.0	40	5.0	97	0.412	100	81.4	LOS F	2.7	19.5	Full	285	0.0	0.0
Approach	40	5.0	40	5.0		0.412		81.4	LOS F	2.7	19.5				
East: Ti Rakau Drive (East)															
Lane 1	906	6.5	906	6.5	901	1.005	100	77.9	LOS E	71.7	530.0	Full	636	0.0	0.0
Lane 2	775	6.6	775	6.6	771 ¹	1.005	100	98.9	LOS F	73.5	543.3	Full	636	0.0	0.8
Lane 3	258	8.6	258	8.6	505	0.511	47 ⁶	29.7	LOS C	8.4	62.8	Short	140	0.0	NA
Lane 4	548	8.6	548	8.6	505	1.084	100	141.5	LOS F	45.1	338.5	Short	93	0.0	NA
Approach	2487	7.2	2487	7.2		1.084		93.5	LOS F	73.5	543.3				
North: Gossamer Drive															
Lane 1	269	17.8	269	17.8	476	0.566	100	53.0	LOS D	14.9	120.6	Full	1010	0.0	0.0
Lane 2	236	17.8	236	17.8	416 ¹	0.566	100	51.8	LOS D	12.7	102.8	Full	1010	0.0	0.0
Lane 3	61	4.9	61	4.9	238	0.256	100	67.3	LOS E	3.6	26.5	Short	30	0.0	NA
Approach	566	16.4	566	16.4		0.566		54.0	LOS D	14.9	120.6				
West: Ti Rakau Drive (West)															
Lane 1	173	2.3	168	2.2	813	0.207	28 ⁵	19.4	LOS B	4.2	30.3	Short	30	0.0	NA
Lane 2	346	3.3	338	3.3	461 ¹	0.732	100	44.4	LOS D	18.0	129.8	Full	479	0.0	0.0
Lane 3	447	3.3	435	3.3	594 ¹	0.732	100	47.4	LOS D	24.9	179.1	Full	479	0.0	0.0
Lane 4	14	7.1	14	6.7	298	0.046	100	59.9	LOS E	0.7	5.5	Short	48	0.0	NA
Approach	980	3.2	955 ^{N1}	3.1		0.732		41.6	LOS D	24.9	179.1				
Intersection	4073	7.5	4048 ^{N1}	7.5		1.084		75.6	LOS E	73.5	543.3				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

⁵ Lane under-utilisation found by the program

⁶ Lane under-utilisation due to downstream effects

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)											
South: Fremantle Place											
Mov. From S To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.	
	W	N	E								
Lane 1	12	11	17	40	5.0	97	0.412	100	NA	NA	
Approach	12	11	17	40	5.0		0.412				
East: Ti Rakau Drive (East)											

Mov. From E To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	23	883	-	906	6.5	901	1.005	100	NA	NA
Lane 2	-	775	-	775	6.6	771 ¹	1.005	100	NA	NA
Lane 3	-	-	258	258	8.6	505	0.511	47 ⁶	98.9	2
Lane 4	-	-	548	548	8.6	505	1.084	100	100.0	3
Approach	23	1658	806	2487	7.2		1.084			
North: Gossamer Drive										
Mov. From N To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	269	-	-	269	17.8	476	0.566	100	NA	NA
Lane 2	236	-	-	236	17.8	416 ¹	0.566	100	NA	NA
Lane 3	-	12	49	61	4.9	238	0.256	100	3.8	2
Approach	505	12	49	566	16.4		0.566			
West: Ti Rakau Drive (West)										
Mov. From W To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	168	-	-	168	2.2	813	0.207	28 ⁵	15.9	2
Lane 2	-	338	-	338	3.3	461 ¹	0.732	100	NA	NA
Lane 3	-	435	-	435	3.3	594 ¹	0.732	100	NA	NA
Lane 4	-	-	14	14	6.7	298	0.046	100	0.0	3
Approach	168	773	14	955	3.1		0.732			
Total %HV Deg. Satn (v/c)										
Intersection	4048	7.5		1.084						

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- 1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
- 5 Lane under-utilisation found by the program
- 6 Lane under-utilisation due to downstream effects

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
South Exit: Fremantle Place Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Ti Rakau Drive (East) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: Gossamer Drive Merge Type: Zipper												
Exit Short Lane	1	80	50.0	258	269	2.50	2.00	426	1473	0.289	0.0	0.2
Merge Lane	2	-	50.0	213	220	2.50	2.00	516	1539	0.336	0.0	0.1
West Exit: Ti Rakau Drive (West) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

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Appendix O

Construction Scenario 1.3 – Phasing Diagrams

PHASING SUMMARY

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

Scheme Design

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 132 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

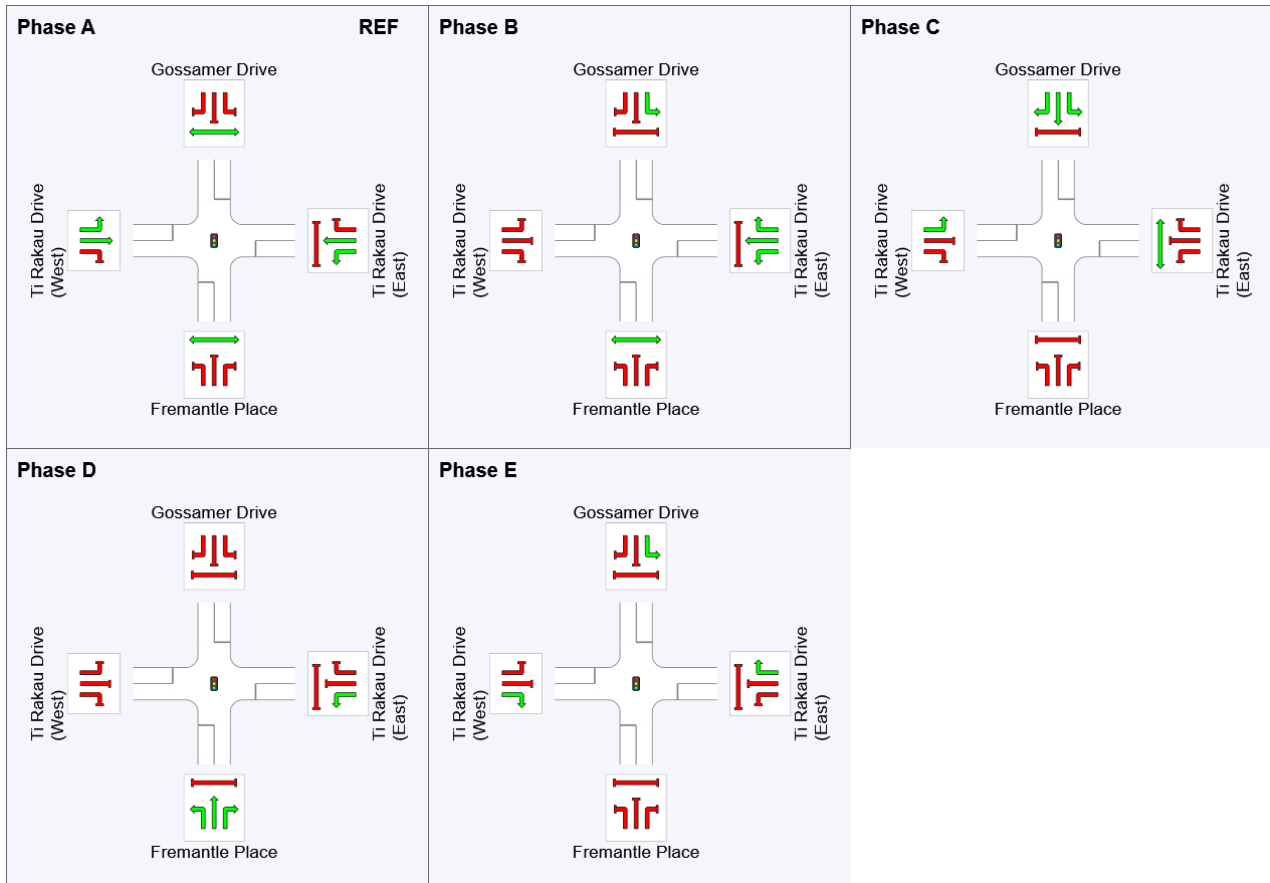
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

Phase	A	B	C	D	E
Phase Change Time (sec)	0	47	61	97	109
Green Time (sec)	41	8	30	6	17
Phase Time (sec)	47	14	36	12	23
Phase Split	36%	11%	27%	9%	17%










See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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PHASING SUMMARY

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 84 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Map Extract Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

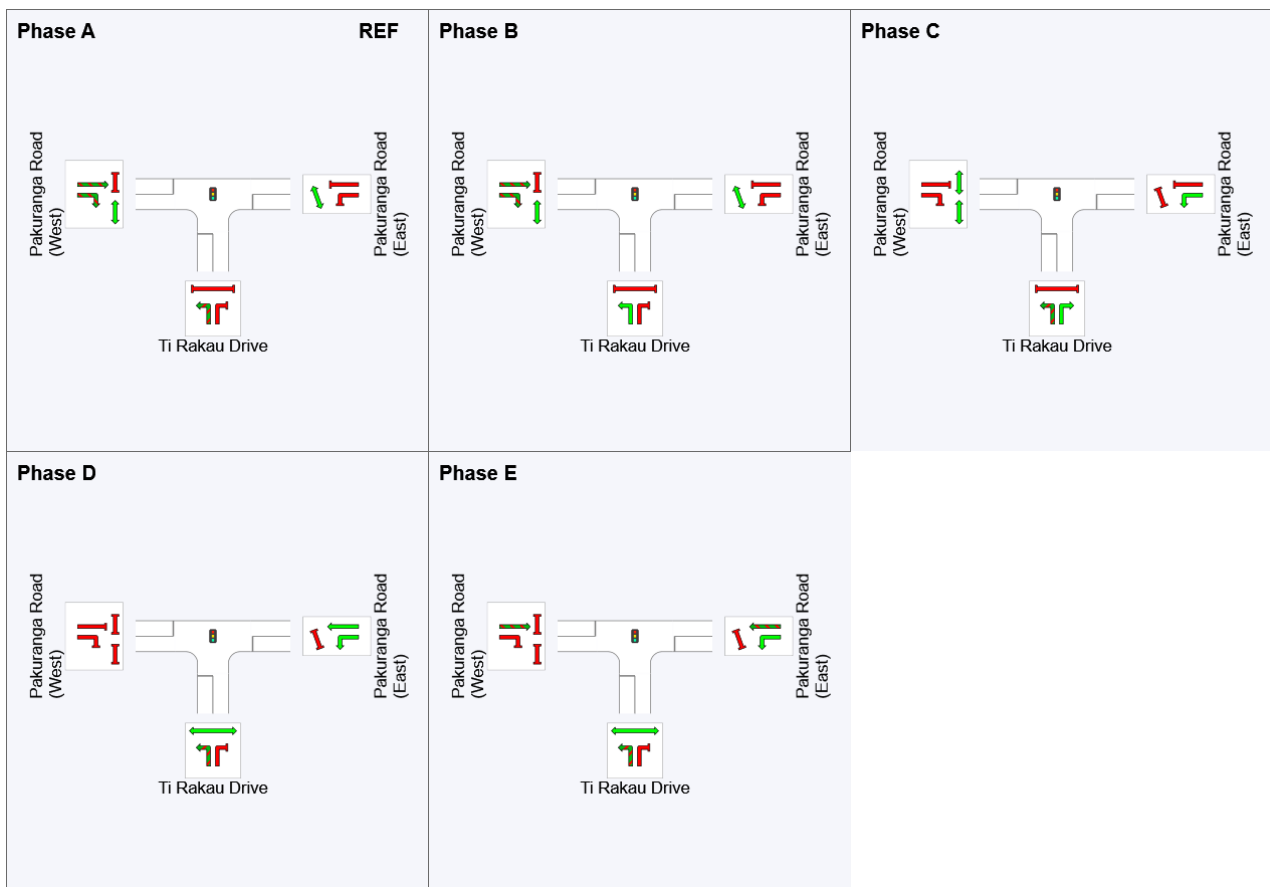
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

Phase	A	B	C	D	E
Phase Change Time (sec)	0	13	25	47	59
Green Time (sec)	7	6	16	6	19
Phase Time (sec)	13	12	22	12	25
Phase Split	15%	14%	26%	14%	30%

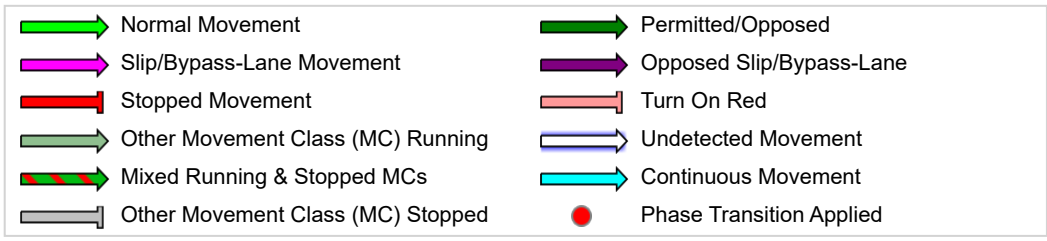
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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PHASING SUMMARY

Site: 1.4v [1.4 William Roberts/ Pakuranga Rd - PD - Conversion (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 61 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Convert Function Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C

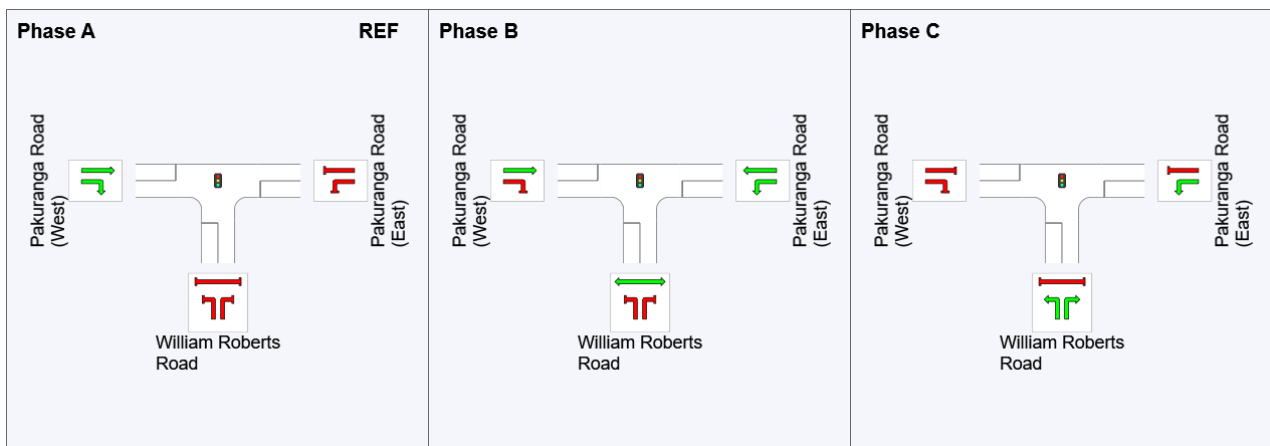
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	12	44
Green Time (sec)	6	26	11
Phase Time (sec)	12	32	17
Phase Split	20%	52%	28%

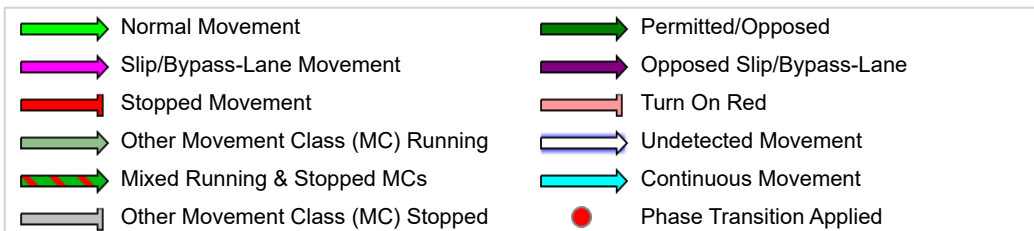
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



PHASING SUMMARY

Site: 1.5 [1.5 Saint Kentigern/ Pakuranga Rd - PD (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 88 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Leading Right Turn

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D

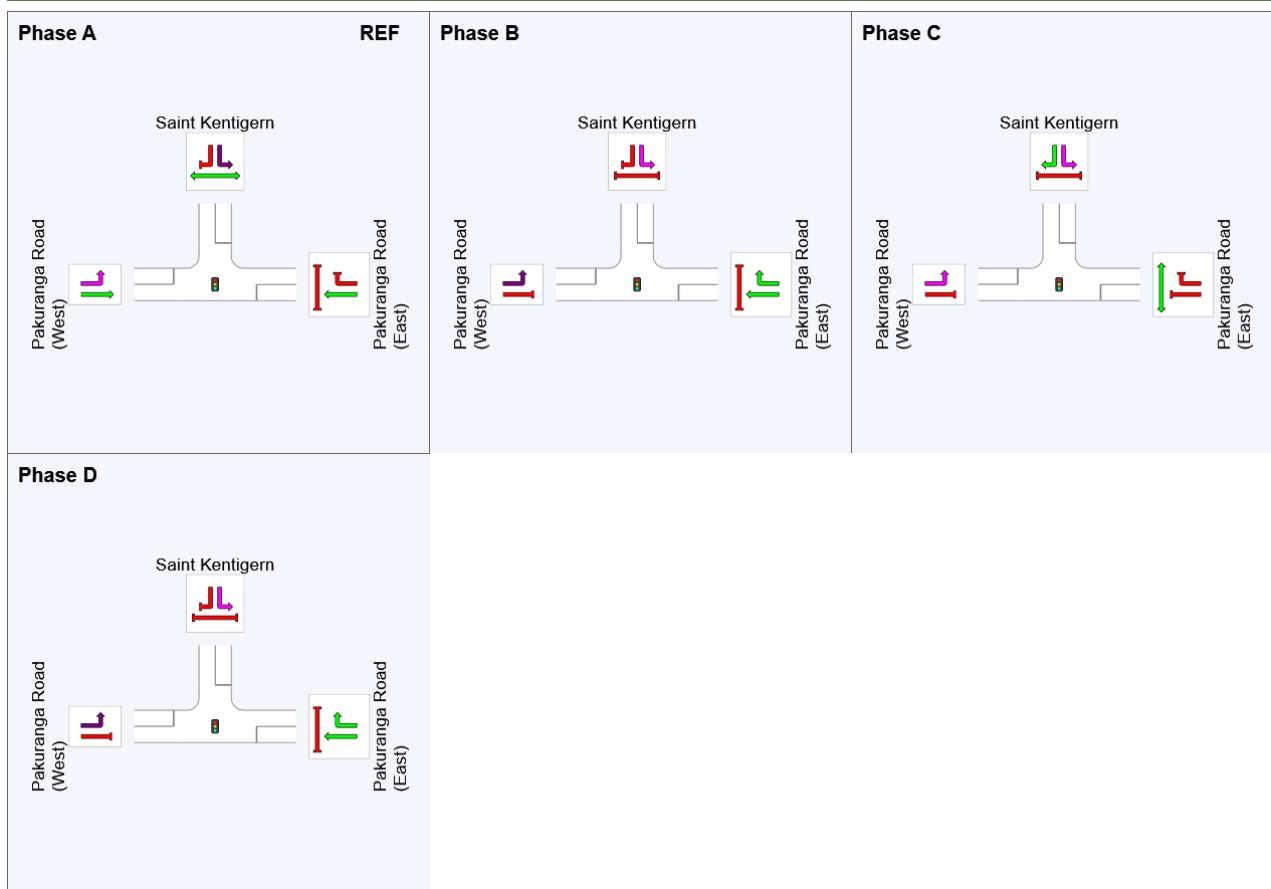
Output Phase Sequence: A, B, C, D

Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	0	36	48	76
Green Time (sec)	30	6	22	6
Phase Time (sec)	36	12	28	12
Phase Split	41%	14%	32%	14%

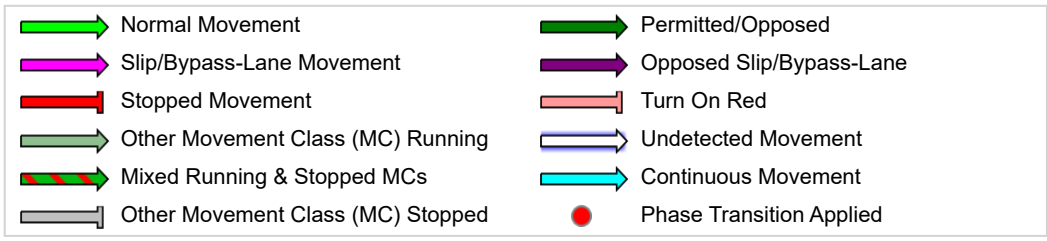
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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PHASING SUMMARY

Site: 4.0 [4.0 Palm Ave / Aylesbury St - Import (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 137 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D

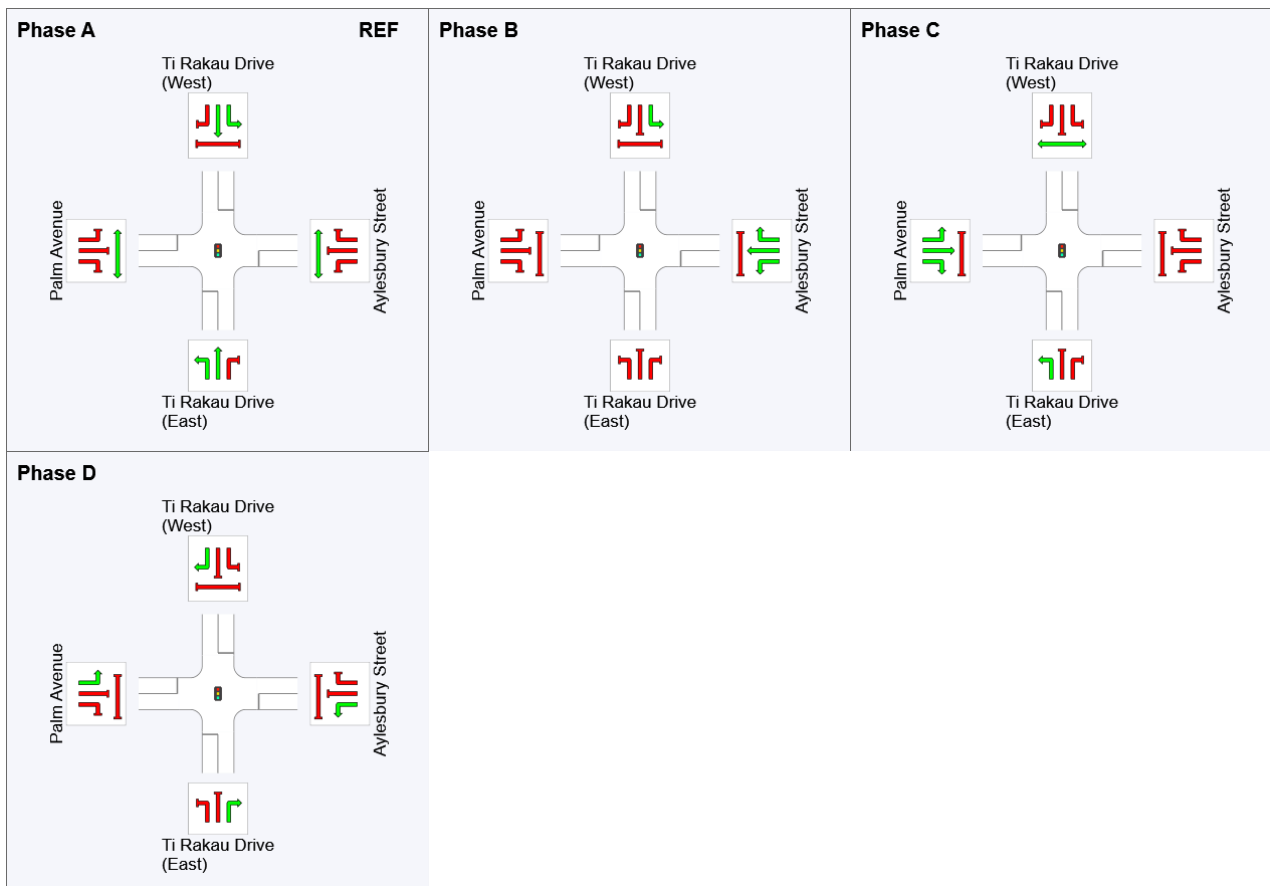
Output Phase Sequence: A, B, C, D

Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	0	72	96	116
Green Time (sec)	66	18	14	18
Phase Time (sec)	72	24	17	24
Phase Split	53%	18%	12%	18%

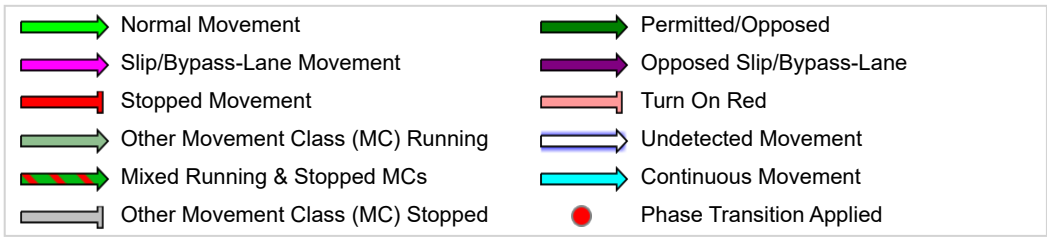
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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PHASING SUMMARY

Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 89 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Map Extract Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C

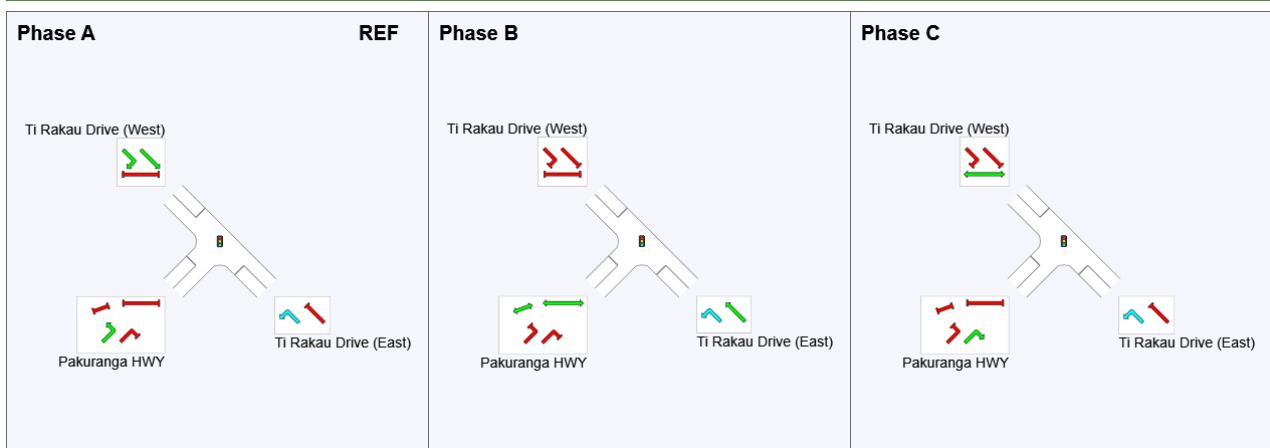
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	33	58
Green Time (sec)	27	19	25
Phase Time (sec)	33	25	31
Phase Split	37%	28%	35%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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PHASING SUMMARY

Site: 7.0 [7.0 Mattson Rd/ Ti Rakau Dr (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Map Extract Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C

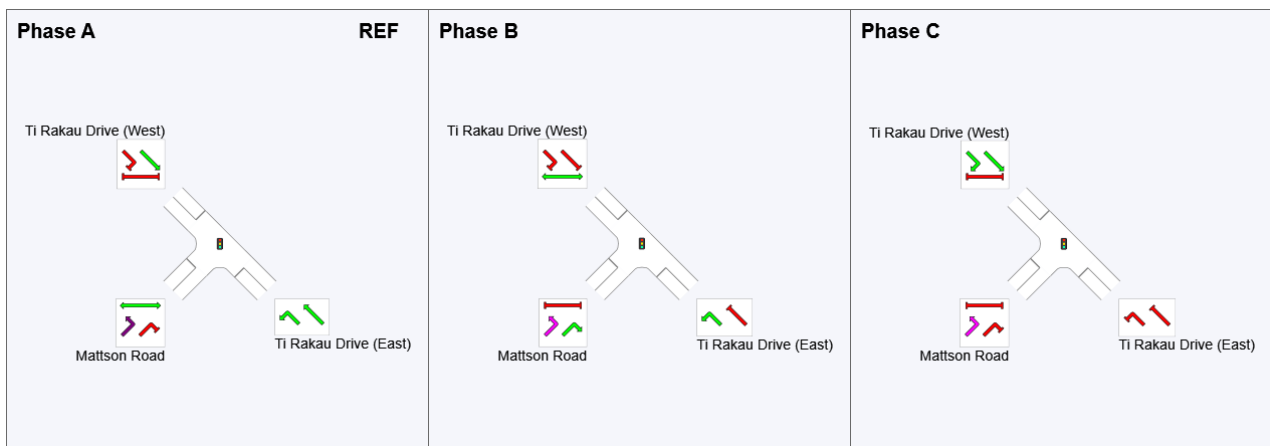
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	50	68
Green Time (sec)	44	12	6
Phase Time (sec)	50	18	12
Phase Split	63%	23%	15%

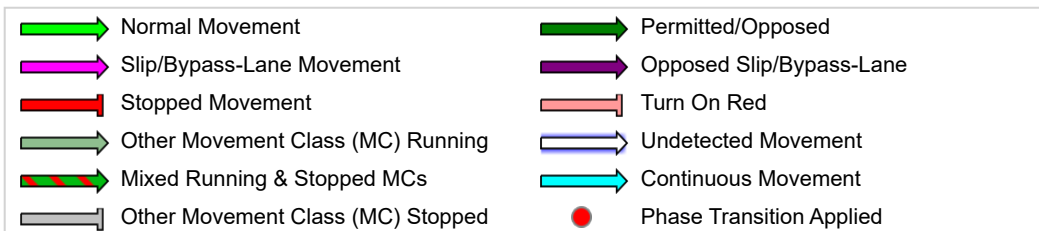
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



PHASING SUMMARY

Site: 10.0 [10.0 Edgewater Dr (West) / Chevis Pl (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 107 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D

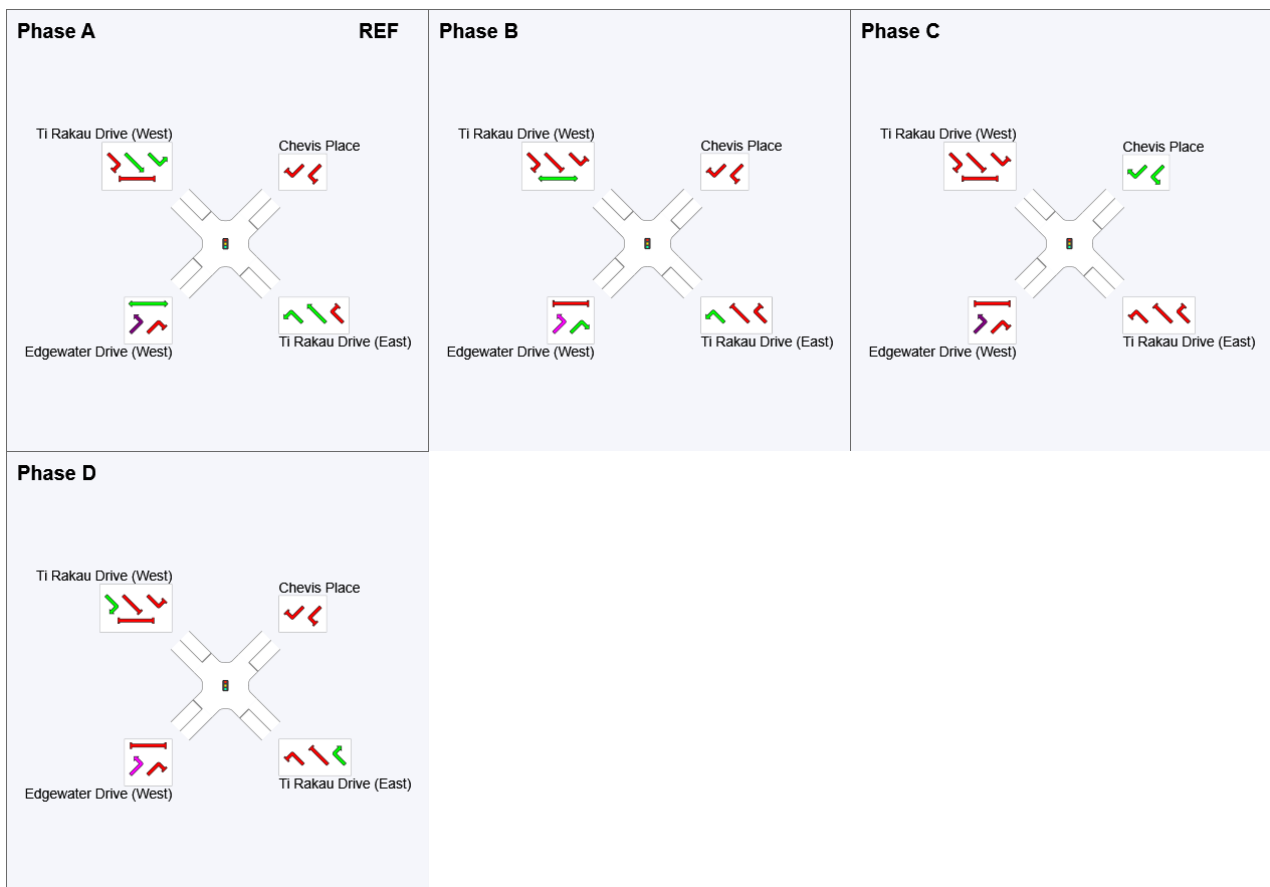
Output Phase Sequence: A, B, C, D

Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	0	62	83	95
Green Time (sec)	56	15	6	6
Phase Time (sec)	62	21	12	12
Phase Split	58%	20%	11%	11%

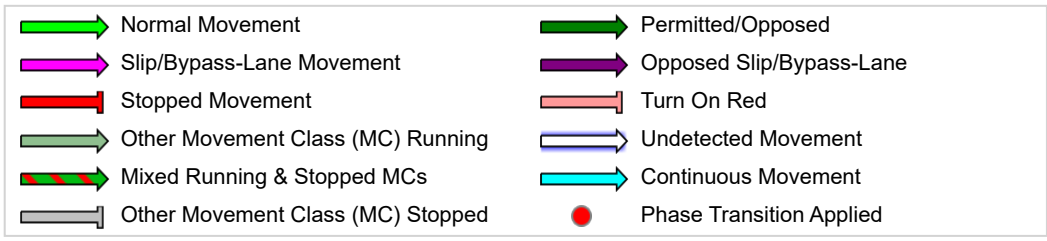
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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PHASING SUMMARY

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 79 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Map Extract Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

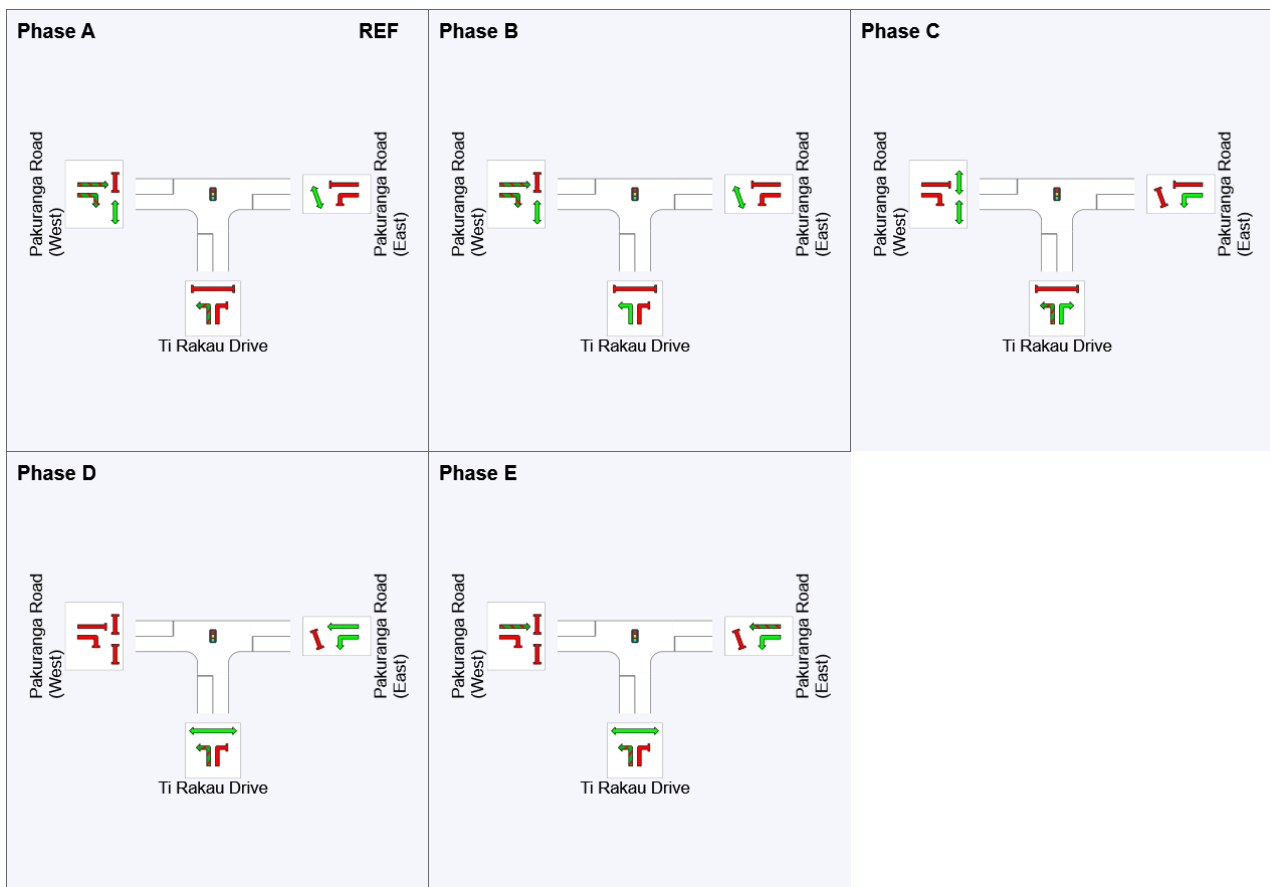
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

Phase	A	B	C	D	E
Phase Change Time (sec)	0	18	30	55	67
Green Time (sec)	12	6	19	6	6
Phase Time (sec)	18	12	25	12	12
Phase Split	23%	15%	32%	15%	15%

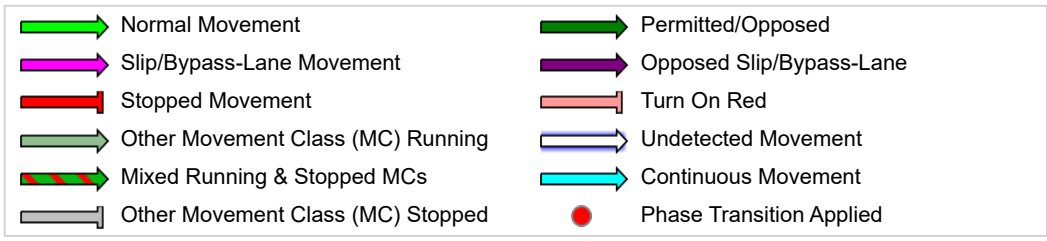
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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TIME - DISTANCE DIAGRAM

Time – Distance Diagram for the Selected Route

Movement Class: Light Vehicles

➡ Route: R101 [Route1]

■ Network: N101 [AM
(Network Folder: General)]

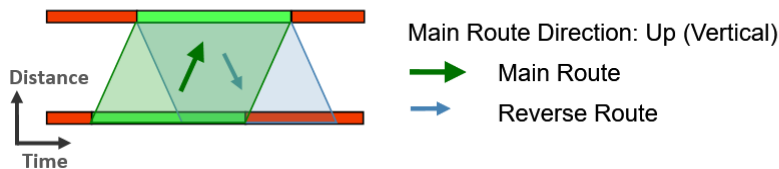
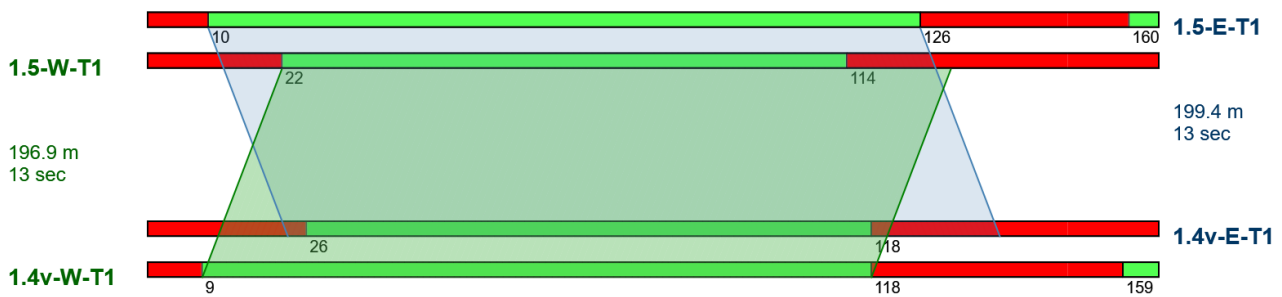
New Route

Network Category: (None)

Network Cycle Time = 150 seconds (Network User-Given Cycle Time)

Signal Offsets option used: User

Interactive Offsets



PHASING SUMMARY

Site: 1.4v [1.4 William Roberts/ Pakuranga Rd - PD - Conversion (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Green Split Priority has been specified

Phase Sequence: Convert Function Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C

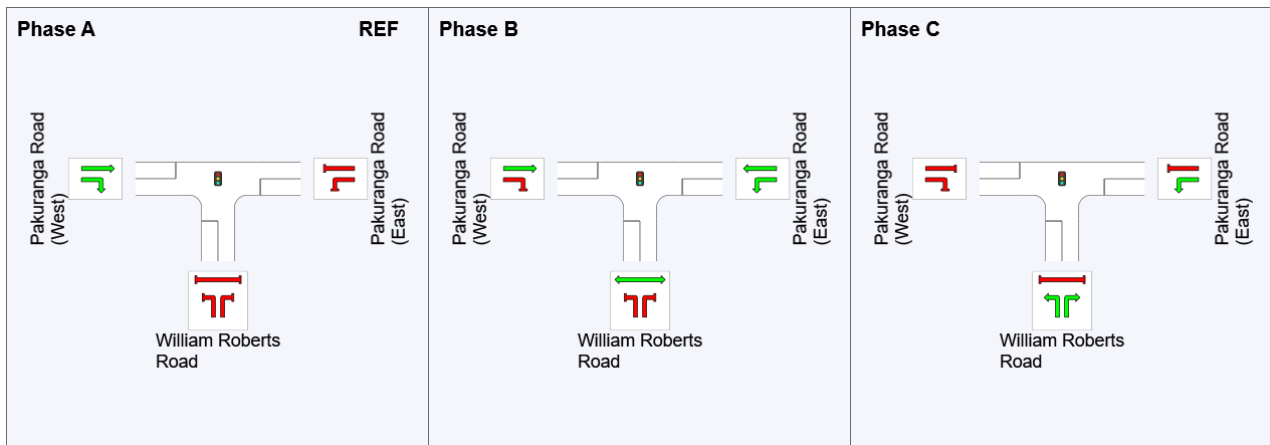
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	17	115
Green Time (sec)	11	92	29
Phase Time (sec)	17	98	35
Phase Split	11%	65%	23%

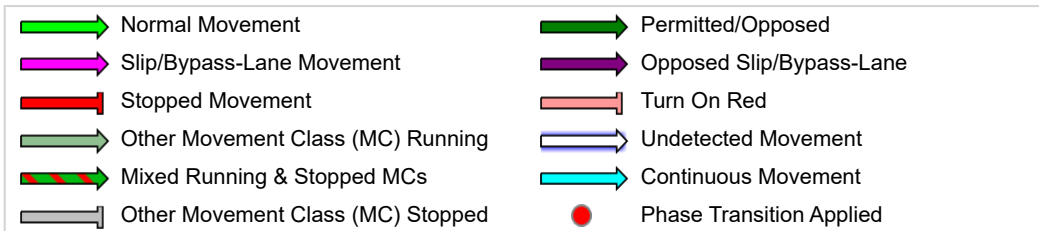
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



PHASING SUMMARY

Site: 1.5 [1.5 Saint Kentigern/ Pakuranga Rd - PD (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Green Split Priority has been specified

Phase Sequence: Leading Right Turn

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D

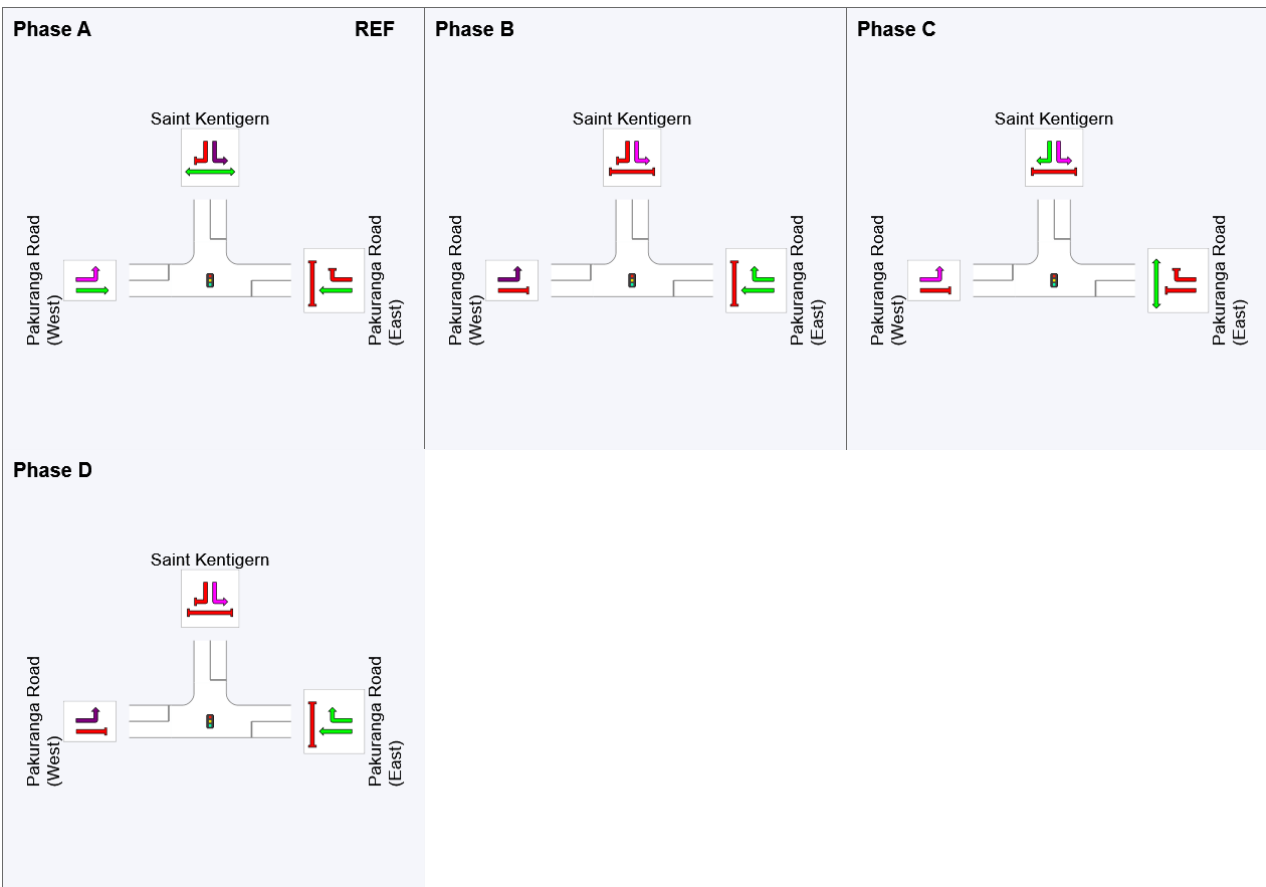
Output Phase Sequence: A, B, C, D

Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	13	111	123	1
Green Time (sec)	92	6	22	6
Phase Time (sec)	98	12	28	12
Phase Split	65%	8%	19%	8%

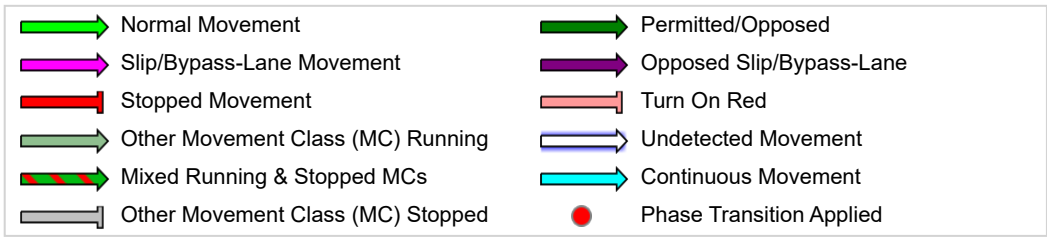
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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PHASING SUMMARY

Site: 4.0 [4.0 Palm Ave / Aylesbury St - Import (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D

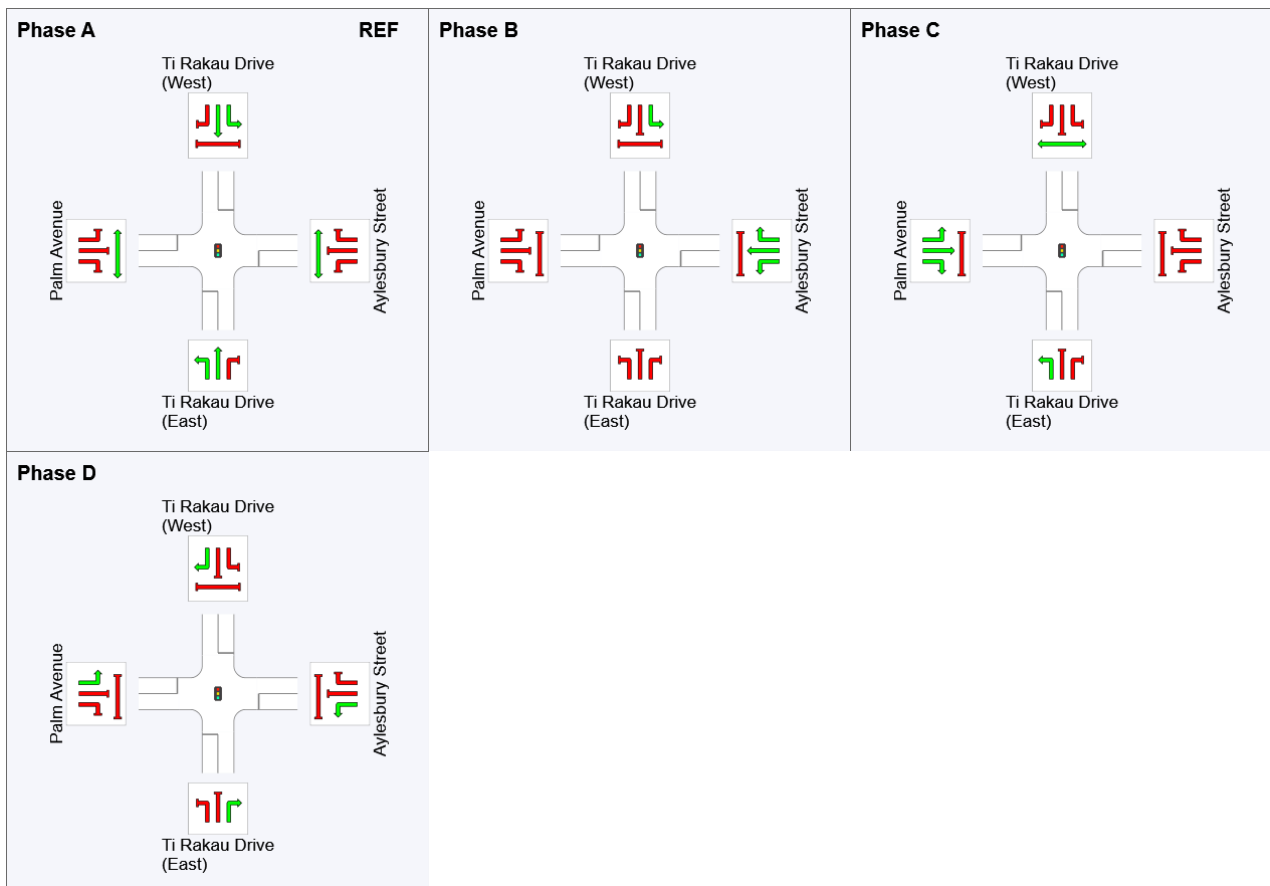
Output Phase Sequence: A, B, C, D

Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	0	111	123	141
Green Time (sec)	105	6	12	6
Phase Time (sec)	111	12	15	12
Phase Split	74%	8%	10%	8%

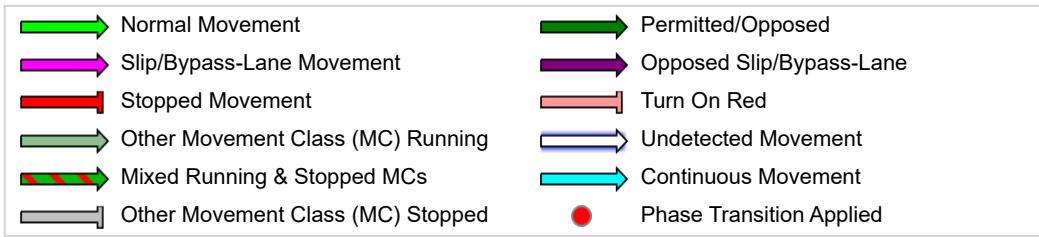
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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PHASING SUMMARY

Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Map Extract Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C

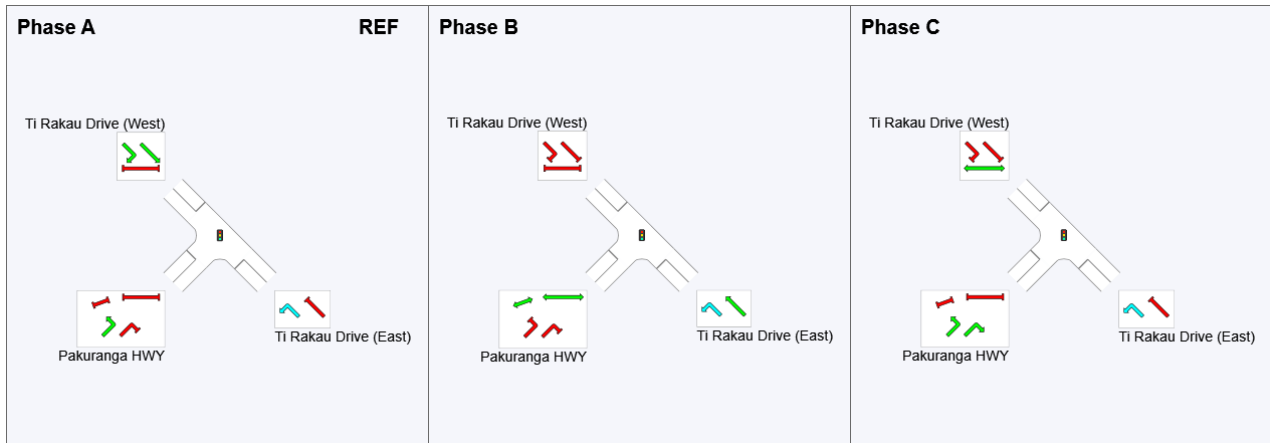
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	50	100
Green Time (sec)	44	44	44
Phase Time (sec)	50	50	50
Phase Split	33%	33%	33%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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PHASING SUMMARY

Site: 7.0 [7.0 Mattson Rd/ Ti Rakau Dr (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 68 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Map Extract Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C

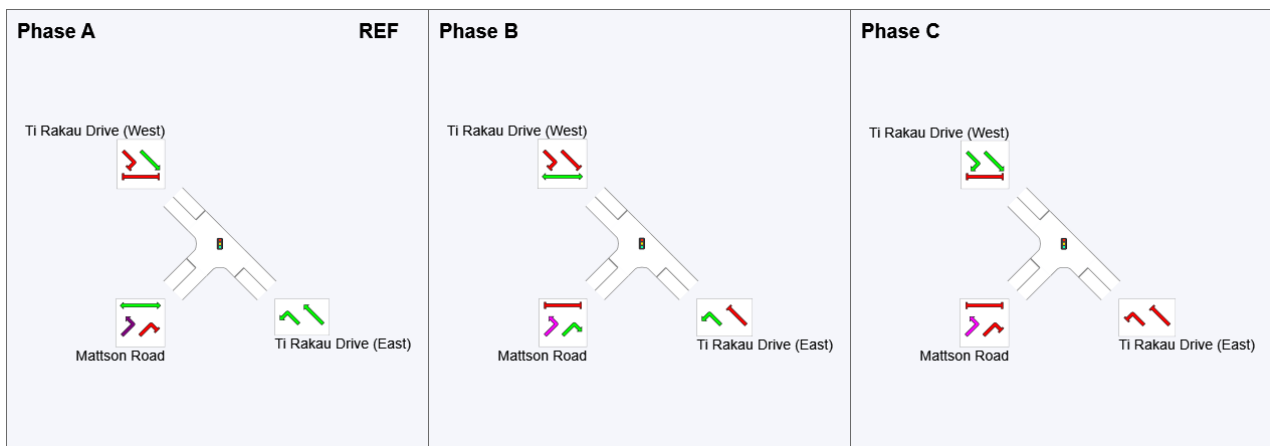
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	40	56
Green Time (sec)	34	10	6
Phase Time (sec)	40	16	12
Phase Split	59%	24%	18%

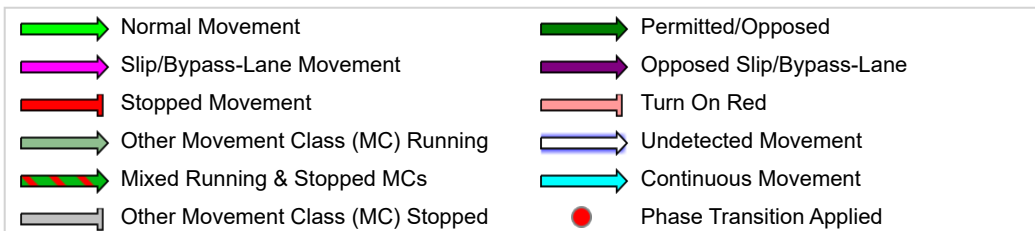
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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PHASING SUMMARY

Site: 10.0 [10.0 Edgewater Dr (West) / Chevis Pl (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 105 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D

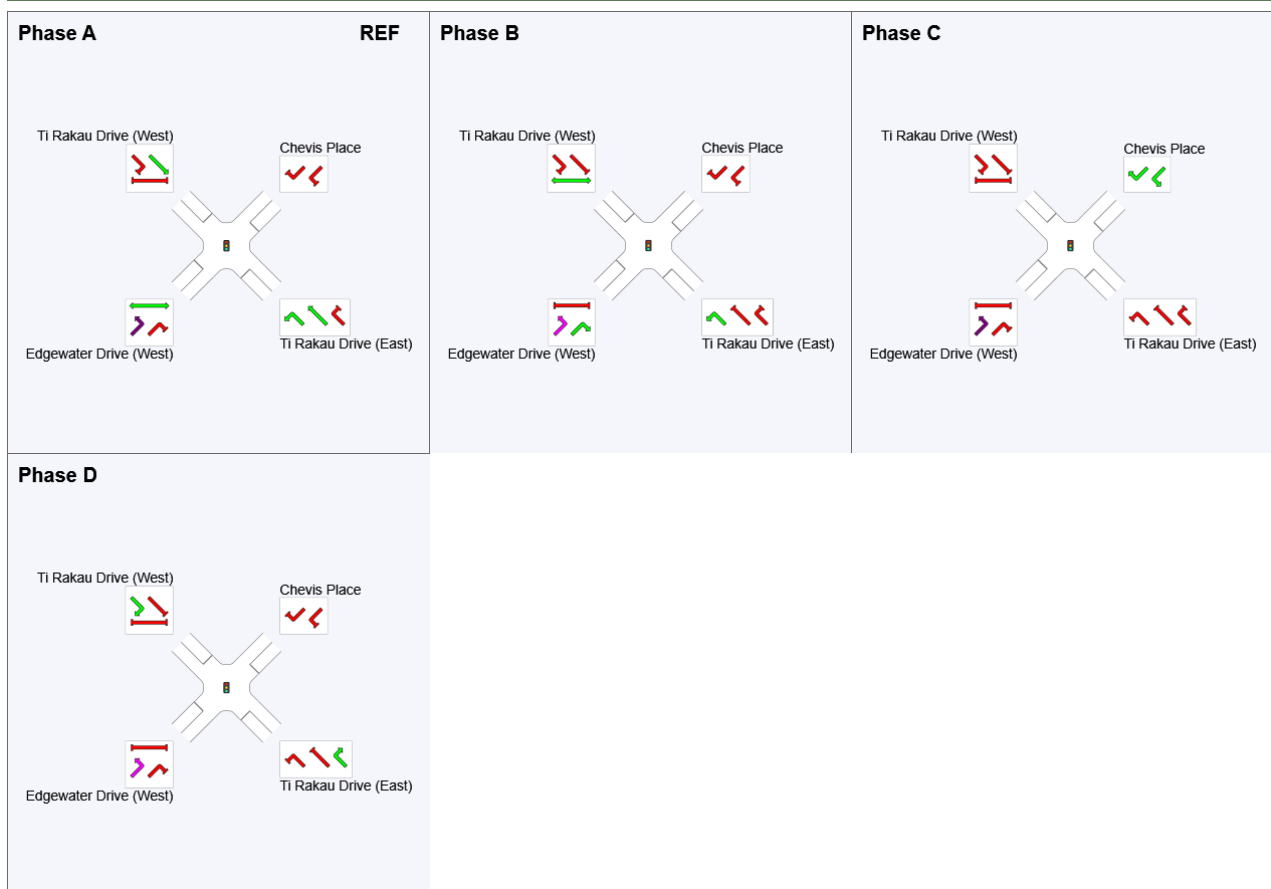
Output Phase Sequence: A, B, C, D

Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	0	60	81	93
Green Time (sec)	54	15	6	6
Phase Time (sec)	60	21	12	12
Phase Split	57%	20%	11%	11%













See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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PHASING SUMMARY

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

Scheme Design

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

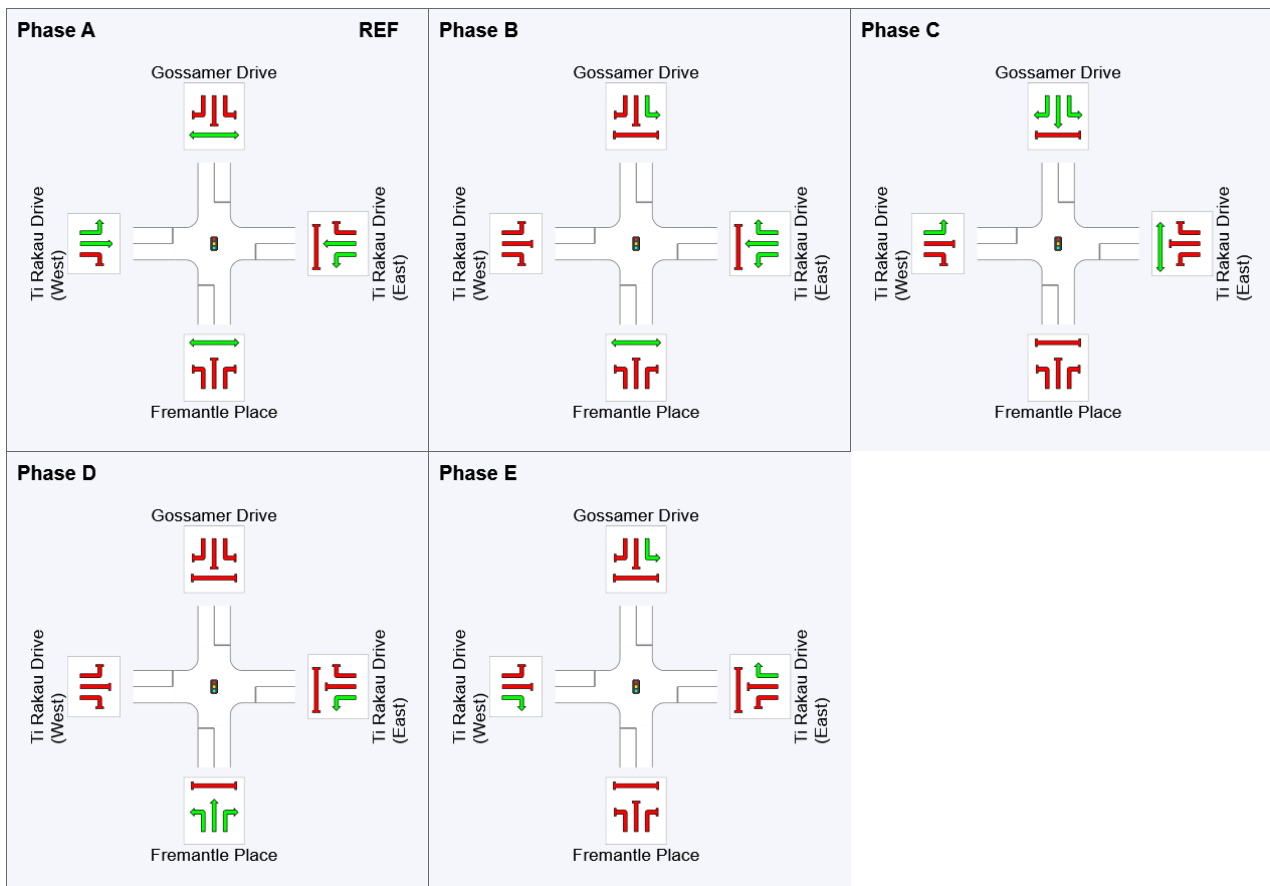
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

Phase	A	B	C	D	E
Phase Change Time (sec)	0	55	79	105	118
Green Time (sec)	49	18	20	8	26
Phase Time (sec)	55	24	25	14	32
Phase Split	37%	16%	17%	9%	21%

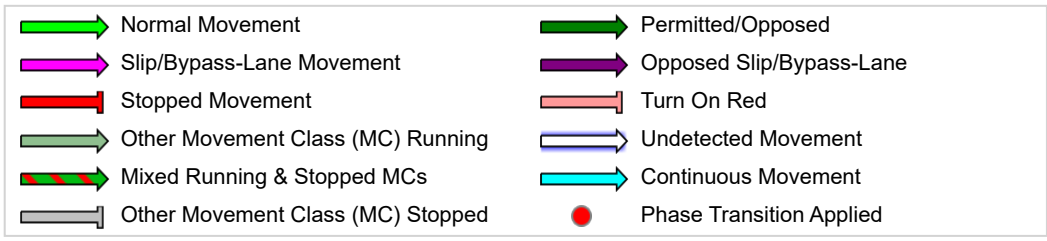
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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Appendix P

Construction Scenario 1.3 – Lane Performance Summaries

SITE LAYOUT

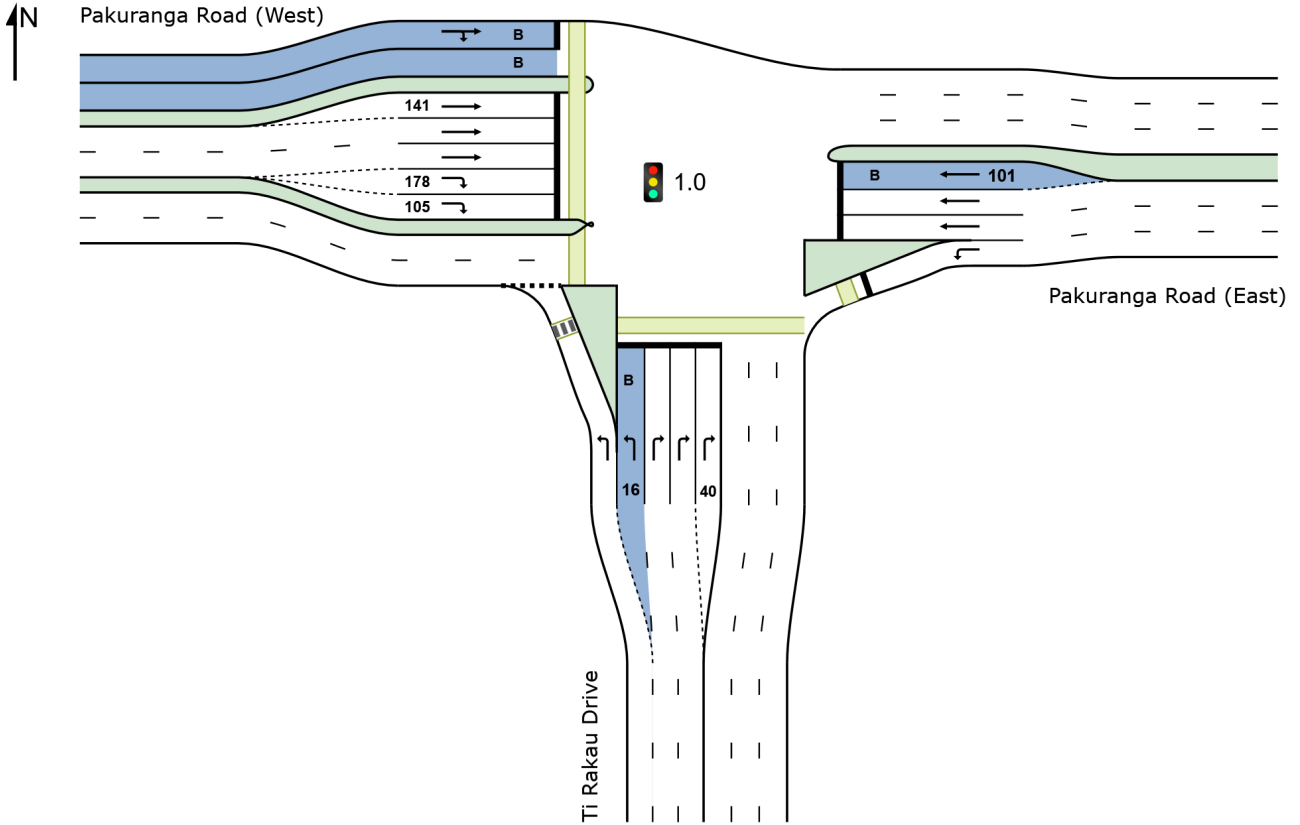
Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

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LANE SUMMARY

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 84 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]						[Veh	Dist]				
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			m		m	%	%
South: Ti Rakau Drive															
Lane 1	579	8.6	566	8.5	896 ¹	0.632	100	13.7	LOS B	13.8	103.5	Full	174	0.0	0.0
Lane 2 (B)	17	100.0	17	100.0	121	0.141	100	47.3	LOS D	0.7	9.1	Short	16	0.0	NA
Lane 3	191	4.0	186	4.0	342	0.545	100	38.7	LOS D	7.1	51.7	Full	174	0.0	0.0
Lane 4	191	4.0	186	4.0	342	0.545	100	38.7	LOS D	7.1	51.7	Full	174	0.0	0.0
Lane 5	191	4.0	186	4.0	342	0.545	100	38.7	LOS D	7.1	51.7	Short	40	0.0	NA
Approach	1168	7.7	1142 ^N ₁	7.7		0.632		26.4	LOS C	13.8	103.5				
East: Pakuranga Road (East)															
Lane 1	832	4.8	812	4.8	1062	0.764	100	17.7	LOS B	23.8	173.6	Full	113	-5.8 ^{N3}	44.4
Lane 2	626	6.1	611	6.0	689	0.887	100	38.5	LOS D	25.0 ^{N4}	184.4 ^{N4}	Full	113	0.0	50.0
Lane 3	626	6.1	611	6.0	689	0.887	100	38.5	LOS D	25.0 ^{N4}	184.4 ^{N4}	Full	113	0.0	50.0
Lane 4 (B)	25	100.0	25	100.0	85	0.293	100	45.6	LOS D	1.1	14.0	Short	101	0.0	NA
Approach	2109	6.7	2059 ^N ₁	6.7		0.887		30.4	LOS C	25.0	184.4				
West: Pakuranga Road (West)															
Lane 1 (B)	24	100.0	24	100.0	78	0.309	100	44.3	LOS D	1.0	12.8	Full	388	-3.7 ^{N3}	0.0
Lane 2	318	9.6	318	9.6	695	0.458	100	21.1	LOS C	9.8	74.6	Short	141	0.0	NA
Lane 3	318	9.6	318	9.6	695	0.458	100	21.1	LOS C	9.8	74.6	Full	388	0.0	0.0
Lane 4	318	9.6	318	9.6	695	0.458	100	21.1	LOS C	9.8	74.6	Full	388	0.0	0.0
Lane 5	131	11.5	131	11.5	142	0.920	100	62.1	LOS E	6.7	51.3	Short	178	0.0	NA
Lane 6	131	11.5	131	11.5	142	0.920	100	62.1	LOS E	6.7	51.3	Short	105	0.0	NA
Approach	1241	11.8	1241	11.8		0.920		30.2	LOS C	9.8	74.6				
Intersection	4518	8.3	4442 ^N ₁	8.5		0.920		29.3	LOS C	25.0	184.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)										
South: Ti Rakau Drive										
Mov. From S To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	W	E								
Lane 1	566	-	566	8.5	896 ¹	0.632	100	NA	NA	
Lane 2	17	-	17	100.0	121	0.141	100	0.0	1	

Lane 3	-	186	186	4.0	342	0.545	100	NA	NA
Lane 4	-	186	186	4.0	342	0.545	100	NA	NA
Lane 5	-	186	186	4.0	342	0.545	100	28.3	4
Approach	583	559	1142	7.7		0.632			
East: Pakuranga Road (East)									
Mov. From E To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.
Lane 1	812	-	812	4.8	1062	0.764	100	NA	NA
Lane 2	-	611	611	6.0	689	0.887	100	NA	NA
Lane 3	-	611	611	6.0	689	0.887	100	NA	NA
Lane 4	-	25	25	100.0	85	0.293	100	0.0	3
Approach	812	1247	2059	6.7		0.887			
West: Pakuranga Road (West)									
Mov. From W To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.
Lane 1	9	15	24	100.0	78	0.309	100	NA	NA
Lane 2	318	-	318	9.6	695	0.458	100	0.0	3
Lane 3	318	-	318	9.6	695	0.458	100	NA	NA
Lane 4	318	-	318	9.6	695	0.458	100	NA	NA
Lane 5	-	131	131	11.5	142	0.920	100	0.0	4
Lane 6	-	131	131	11.5	142	0.920	100	0.0	5
Approach	964	277	1241	11.8		0.920			
Total %HV Deg. Satn (v/c)									
Intersection	4442	8.5		0.920					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- 1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

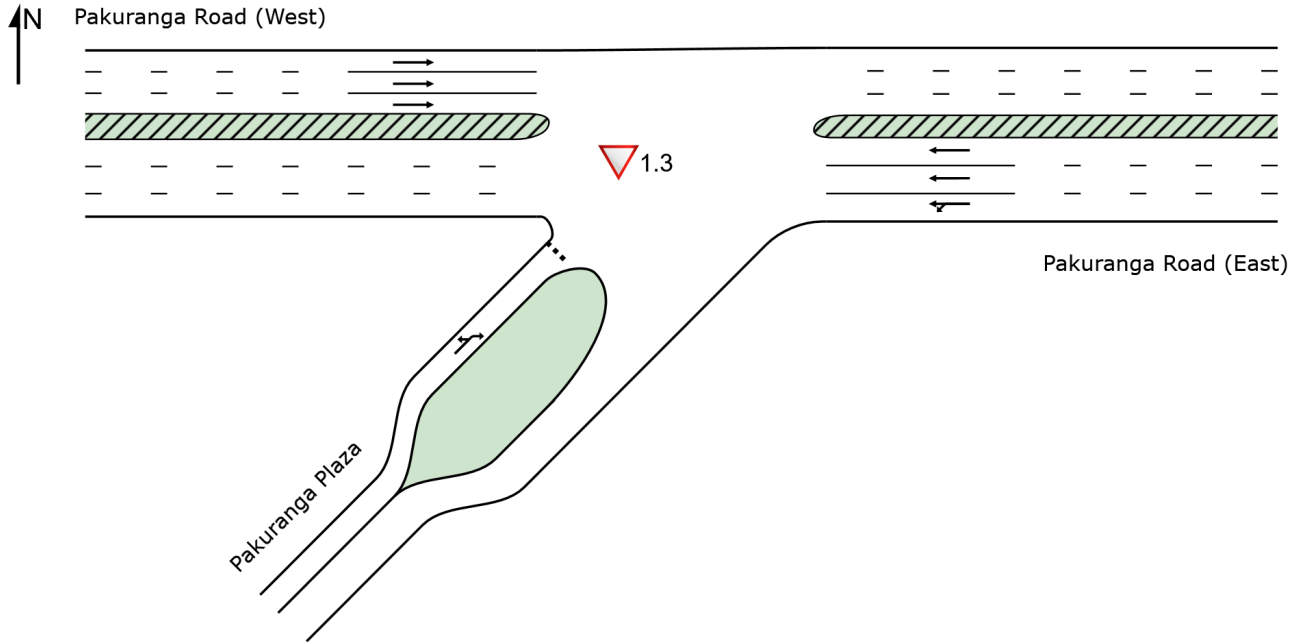
Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Lane Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Ti Rakau Drive											
Merge Type: Not Applied											
Full Length Lane	1										
Full Length Lane	2										
Full Length Lane	3										
East Exit: Pakuranga Road (East)											
Merge Type: Not Applied											
Full Length Lane	1										
Full Length Lane	2										
Full Length Lane	3										
West Exit: Pakuranga Road (West)											
Merge Type: Not Applied											
Full Length Lane	1										
Full Length Lane	2										
Full Length Lane	3										

SITE LAYOUT

▽ Site: 1.3 [1.3 Mall/ Pakuranga Rd - PD (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

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LANE SUMMARY

Site: 1.3 [1.3 Mall/ Pakuranga Rd - PD (Site Folder: General)]

Network: N101 [AM
(Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS [Total HV] veh/h %		ARRIVAL FLOWS [Total HV] veh/h %		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh Dist] m		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
East: Pakuranga Road (East)															
Lane 1	719	8.5	719	8.5	1844	0.390	100	1.4	LOS A	0.0	0.0	Full	152	0.0	0.0
Lane 2	737	5.6	737	5.6	1892	0.390	100	0.0	LOS A	0.0	0.0	Full	152	0.0	0.0
Lane 3	737	5.6	737	5.6	1892	0.390	100	0.0	LOS A	0.0	0.0	Full	152	0.0	0.0
Approach	2193	6.5	2193	6.5		0.390		0.5	NA	0.0	0.0				
West: Pakuranga Road (West)															
Lane 1	509	8.1	505	8.1	1785	0.283	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Lane 2	509	8.1	505	8.1	1785	0.283	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Lane 3	506	8.1	503	8.1	1775	0.283	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Approach	1524	8.1	1514 ^{N1}	8.1		0.283		0.0	NA	0.0	0.0				
SouthWest: Pakuranga Plaza															
Lane 1	54	5.6	54	5.6	11	4.740	100	3575.0	LOS F	35.6	260.8	Full	196	-11.4 ^{N7}	14.2
Approach	54	5.6	54	5.6		4.740		3575.0	LOS F	35.6	260.8				
Intersection	3771	7.2	3761 ^{N1}	7.2		4.740		51.6	NA	35.6	260.8				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N7} The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)										
East: Pakuranga Road (East)										
Mov. From E To Exit:	L1	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SW	W								
Lane 1	180	539	719	8.5	1844	0.390	100	NA	NA	
Lane 2	-	737	737	5.6	1892	0.390	100	NA	NA	
Lane 3	-	737	737	5.6	1892	0.390	100	NA	NA	
Approach	180	2013	2193	6.5		0.390				
West: Pakuranga Road (West)										
Mov. From W To Exit:	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.		
	E									
Lane 1	505	505	8.1	1785	0.283	100	NA	NA		
Lane 2	505	505	8.1	1785	0.283	100	NA	NA		

Lane 3	503	503	8.1		1775	0.283	100	NA	NA
Approach	1514	1514	8.1			0.283			
SouthWest: Pakuranga Plaza									
Mov. From SW To Exit:	L3 W	R1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.
Lane 1	29	25	54	5.6	11	4.740	100	NA	NA
Approach	29	25	54	5.6		4.740			
Total %HV Deg. Satn (v/c)									
Intersection	3761	7.2		4.740					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

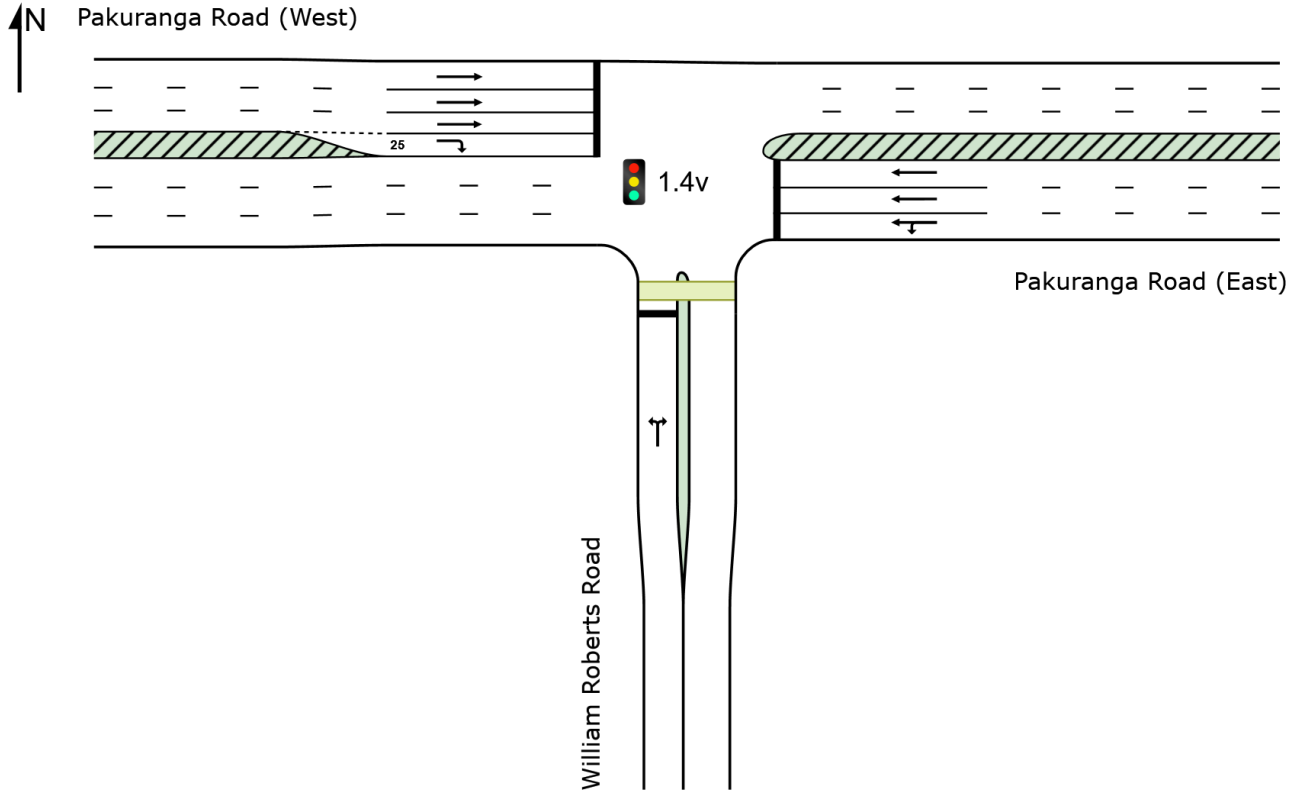
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: Pakuranga Road (East)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.
Full Length Lane	3											Merge Analysis not applied.
West Exit: Pakuranga Road (West)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.
Full Length Lane	3											Merge Analysis not applied.
SouthWest Exit: Pakuranga Plaza												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.

SITE LAYOUT

 Site: 1.4v [1.4 William Roberts/ Pakuranga Rd - PD - Conversion (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 1.4v [1.4 William Roberts/ Pakuranga Rd - PD - Conversion (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 61 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS [Total HV]		ARRIVAL FLOWS [Total HV]		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh Dist]		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			m		m	%	%
South: William Roberts Road															
Lane 1	287	8.7	287	8.7	329	0.871	100	40.0	LOS D	10.3	77.1	Full	244	-0.7 ^{N7}	0.0
Approach	287	8.7	287	8.7		0.871		40.0	LOS D	10.3	77.1				
East: Pakuranga Road (East)															
Lane 1	699	6.0	699	6.0	790	0.885	100	29.7	LOS C	25.3	185.9	Full	184	0.0	5.9
Lane 2	688	6.2	688	6.2	778	0.885	100	28.9	LOS C	24.9	183.3	Full	184	0.0	4.6
Lane 3	696	6.2	696	6.2	786	0.885	100	28.8	LOS C	25.1	184.9	Full	184	0.0	5.4
Approach	2083	6.1	2083	6.1		0.885		29.1	LOS C	25.3	185.9				
West: Pakuranga Road (West)															
Lane 1	565	8.1	558	8.1	1142	0.489	100	6.7	LOS A	9.0	67.7	Full	152	0.0	0.0
Lane 2	516	8.1	510	8.1	1043	0.489	100	6.8	LOS A	8.3	62.0	Full	152	-5.6 ^{N3}	0.0
Lane 3	470	8.1	464	8.1	949 ¹	0.489	100	6.5	LOS A	7.3	54.4	Full	152	-5.6 ^{N3}	0.0
Lane 4	54	13.0	53	13.0	160	0.333	100	35.8	LOS D	1.6	12.5	Short	25	0.0	NA
Approach	1605	8.2	1585 ^{N1}	8.3		0.489		7.7	LOS A	9.0	67.7				
Intersection	3975	7.2	3955 ^{N1}	7.2		0.885		21.3	LOS C	25.3	185.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

^{N7} The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)										
South: William Roberts Road										
Mov. From S To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	W	E								
Lane 1	253	34	287	8.7	329	0.871	100	NA	NA	
Approach	253	34	287	8.7		0.871				
East: Pakuranga Road (East)										
Mov. From E To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	S	W								
Lane 1	143	556	699	6.0	790	0.885	100	NA	NA	
Lane 2	-	688	688	6.2	778	0.885	100	NA	NA	

Lane 3	-	696	696	6.2	786	0.885	100	NA	NA
Approach	143	1940	2083	6.1		0.885			
West: Pakuranga Road (West)									
Mov. From W To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	E	S							
Lane 1	558	-	558	8.1	1142	0.489	100	NA	NA
Lane 2	510	-	510	8.1	1043	0.489	100	NA	NA
Lane 3	464	-	464	8.1	949 ¹	0.489	100	NA	NA
Lane 4	-	53	53	13.0	160	0.333	100	0.0	3
Approach	1532	53	1585	8.3		0.489			
Total %HV Deg. Satn (v/c)									
Intersection	3955	7.2		0.885					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- ¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

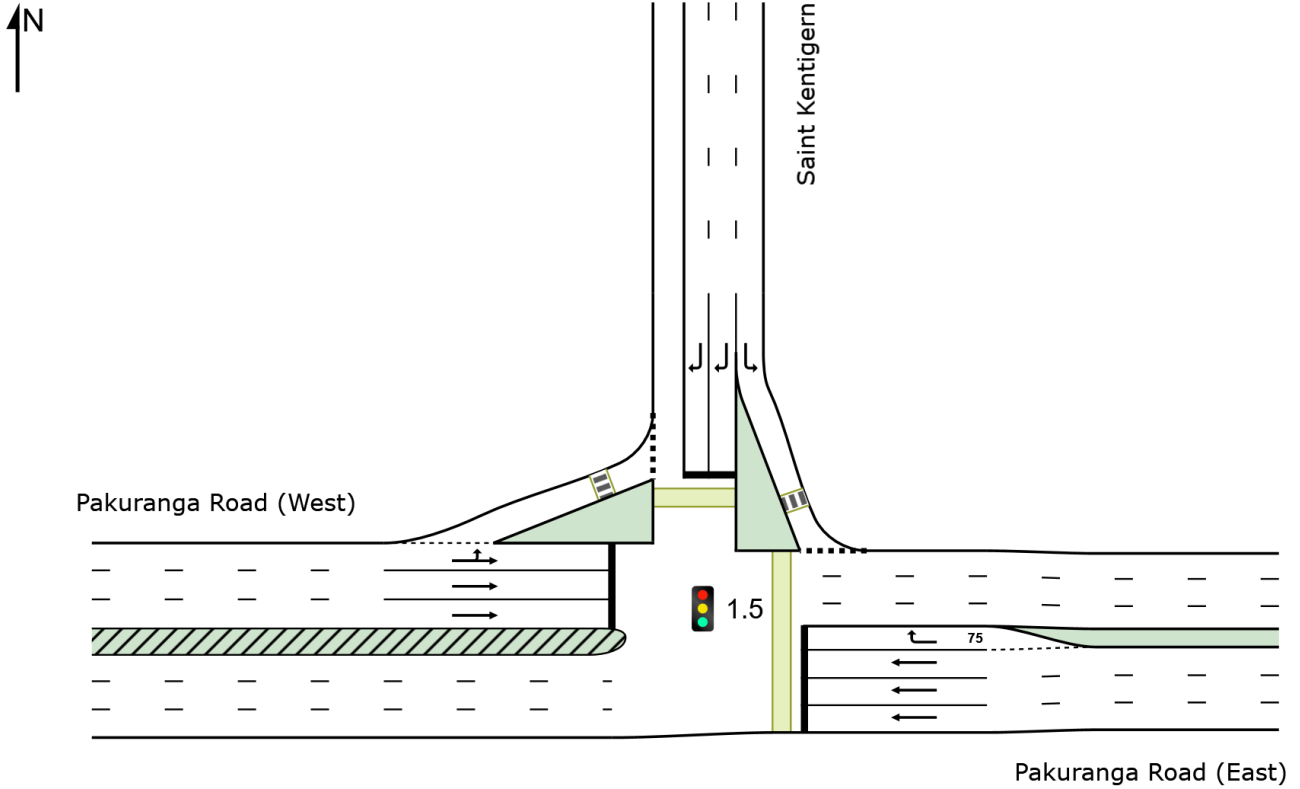
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate % veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
South Exit: William Roberts Road												
Merge Type: Not Applied												
Full Length Lane	1											
East Exit: Pakuranga Road (East)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											
West Exit: Pakuranga Road (West)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											

SITE LAYOUT

Site: 1.5 [1.5 Saint Kentigern/ Pakuranga Rd - PD (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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LANE SUMMARY

Site: 1.5 [1.5 Saint Kentigern/ Pakuranga Rd - PD (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 88 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV %	[Total veh/h	HV %						[Veh	Dist] m				
East: Pakuranga Road (East)															
Lane 1	685	6.3	685	6.3	1065	0.644	100	11.6	LOS B	18.7	138.0	Full	87	-5.9 ^{N7}	47.3
Lane 2	695	6.3	695	6.3	1079	0.644	100	11.6	LOS B	18.9	139.8	Full	87	-4.6 ^{N3}	48.5
Lane 3	672	6.3	672	6.3	1045	0.644	100	11.4	LOS B	18.0	132.8	Full	87	-5.4 ^{N3}	43.7
Lane 4	72	2.8	72	2.8	239	0.301	100	26.0	LOS C	1.7	12.0	Short	75	0.0	NA
Approach	2124	6.2	2124	6.2		0.644		12.0	LOS B	18.9	139.8				
North: Saint Kentigern															
Lane 1	13	0.0	13	0.0	938	0.014	100	5.8	LOS A	0.2	1.3	Full	96	0.0	0.0
Lane 2	20	10.0	20	10.0	407	0.050	100	27.1	LOS C	0.7	5.0	Full	96	-4.6 ^{N3}	0.0
Lane 3	20	10.0	20	10.0	397	0.050	100	27.1	LOS C	0.6	4.9	Full	96	-5.4 ^{N3}	0.0
Approach	53	7.5	53	7.5		0.050		21.9	LOS C	0.7	5.0				
West: Pakuranga Road (West)															
Lane 1	505	7.2	499	7.3	586	0.853	100	33.1	LOS C	21.0	156.0	Full	184	0.0	0.0
Lane 2	541	8.4	535	8.4	627	0.853	100	36.8	LOS D	24.7	185.3	Full	184	0.0	5.6
Lane 3	541	8.4	535	8.4	627	0.853	100	36.8	LOS D	24.7	185.3	Full	184	0.0	5.6
Approach	1587	8.0	1569 ^{N1}	8.1		0.853		35.6	LOS D	24.7	185.3				
Intersection	3764	7.0	3746 ^{N1}	7.0		0.853		22.0	LOS C	24.7	185.3				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

N3 Capacity Adjustment due to downstream lane blockage determined by the program.

N7 The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)										
East: Pakuranga Road (East)										
Mov. From E To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	W	N								
Lane 1	685	-	685	6.3	1065	0.644	100	NA	NA	
Lane 2	695	-	695	6.3	1079	0.644	100	NA	NA	
Lane 3	672	-	672	6.3	1045	0.644	100	NA	NA	
Lane 4	-	72	72	2.8	239	0.301	100	0.0	3	
Approach	2052	72	2124	6.2		0.644				
North: Saint Kentigern										
Mov. From N	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	

To Exit:	E	W			veh/h	v/c	%	%	No.
Lane 1	13	-	13	0.0	938	0.014	100	NA	NA
Lane 2	-	20	20	10.0	407	0.050	100	NA	NA
Lane 3	-	20	20	10.0	397	0.050	100	NA	NA
Approach	13	40	53	7.5		0.050			
West: Pakuranga Road (West)									
Mov.	L2	T1	Total	%HV		Deg.	Lane	Prob.	Ov.
From W					Cap.	Satn	Util.	SL Ov.	Lane
To Exit:	N	E			veh/h	v/c	%	%	No.
Lane 1	127	372	499	7.3	586	0.853	100	NA	NA
Lane 2	-	535	535	8.4	627	0.853	100	NA	NA
Lane 3	-	535	535	8.4	627	0.853	100	NA	NA
Approach	127	1441	1569	8.1		0.853			
Total %HV Deg.Satn (v/c)									
Intersection	3746	7.0		0.853					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate % veh/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
East Exit: Pakuranga Road (East)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											
North Exit: Saint Kentigern												
Merge Type: Not Applied												
Full Length Lane	1											
West Exit: Pakuranga Road (West)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											

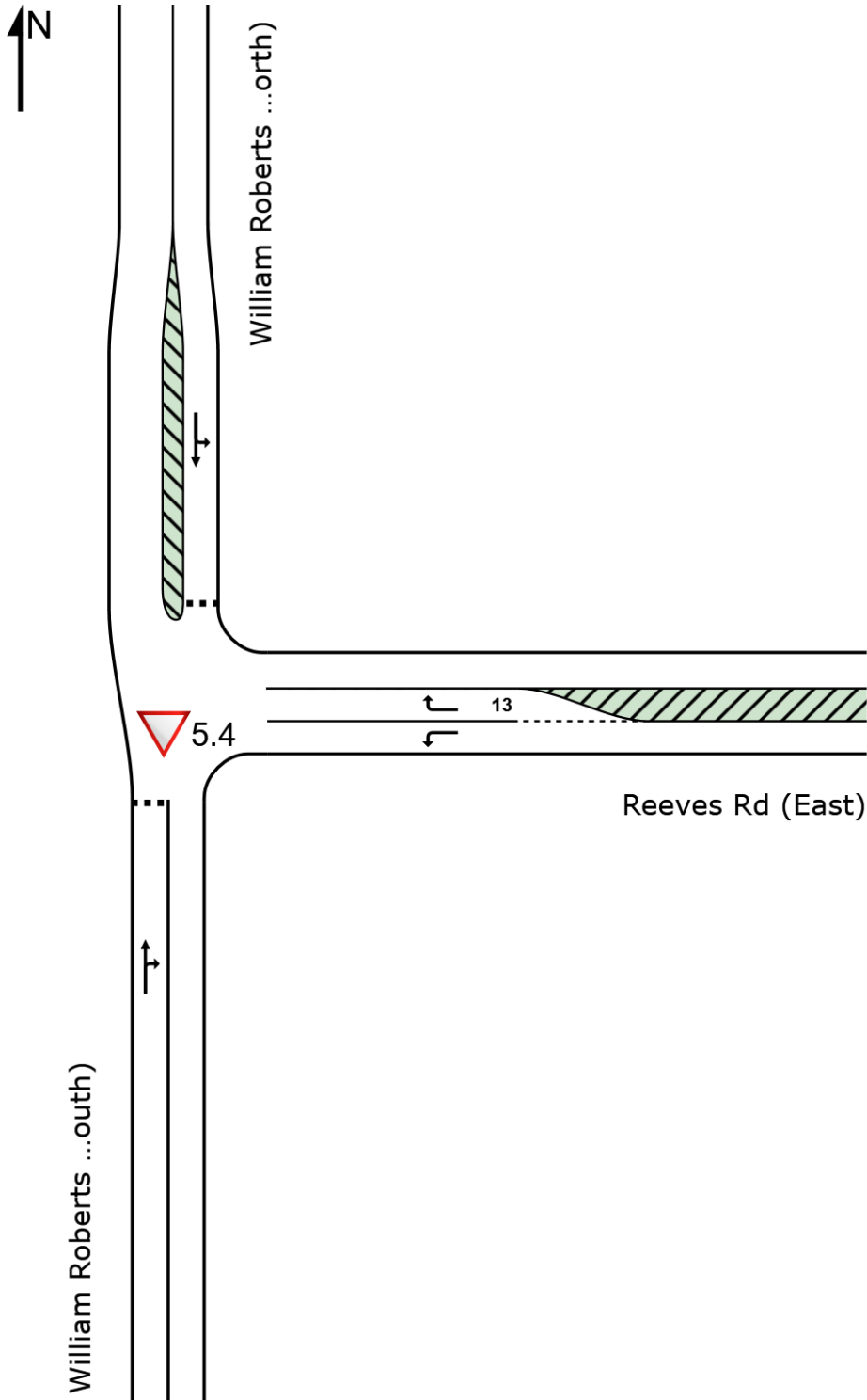
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SITE LAYOUT

▽ Site: 5.4 [5.4 Reeves Rd / William Roberts Rd - Import (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 5.4 [5.4 Reeves Rd / William Roberts Rd - Import (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS [Total HV]		ARRIVAL FLOWS [Total HV]		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh Dist]		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			m		m	%	%
South: William Roberts Rd (South)															
Lane 1	219	7.8	219	7.8	831	0.263	100	4.2	LOS A	1.0	7.6	Full	243	0.0	0.0
Approach	219	7.8	219	7.8		0.263		4.2	LOS A	1.0	7.6				
East: Reeves Rd (East)															
Lane 1	215	9.3	215	9.3	1714	0.125	100	4.7	LOS A	0.0	0.0	Full	266	0.0	0.0
Lane 2	222	9.0	222	9.0	1718	0.129	100	4.7	LOS A	0.0	0.0	Short	13	0.0	NA
Approach	437	9.2	437	9.2		0.129		4.7	NA	0.0	0.0				
North: William Roberts Rd (North)															
Lane 1	141	5.0	141	5.0	1113	0.126	100	5.7	LOS A	0.5	3.4	Full	244	0.0	0.0
Approach	141	5.0	141	5.0		0.126		5.7	LOS A	0.5	3.4				
Intersection	797	8.0	796 ^{N1}	8.1		0.263		4.7	NA	1.0	7.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Approach Lane Flows (veh/h)										
South: William Roberts Rd (South)										
Mov. From S To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	66	153	219	7.8	831	0.263	100	NA	NA	
Approach	66	153	219	7.8		0.263				
East: Reeves Rd (East)										
Mov. From E To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	215	-	215	9.3	1714	0.125	100	NA	NA	
Lane 2	-	222	222	9.0	1718	0.129	100	0.0	1	
Approach	215	222	437	9.2		0.129				
North: William Roberts Rd (North)										
Mov. From N To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	42	99	141	5.0	1113	0.126	100	NA	NA	
Approach	42	99	141	5.0		0.126				

	Total	%HV	Deg.Satn (v/c)
Intersection	796	8.1	0.263

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: William Roberts Rd (South)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
East Exit: Reeves Rd (East)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
North Exit: William Roberts Rd (North)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.

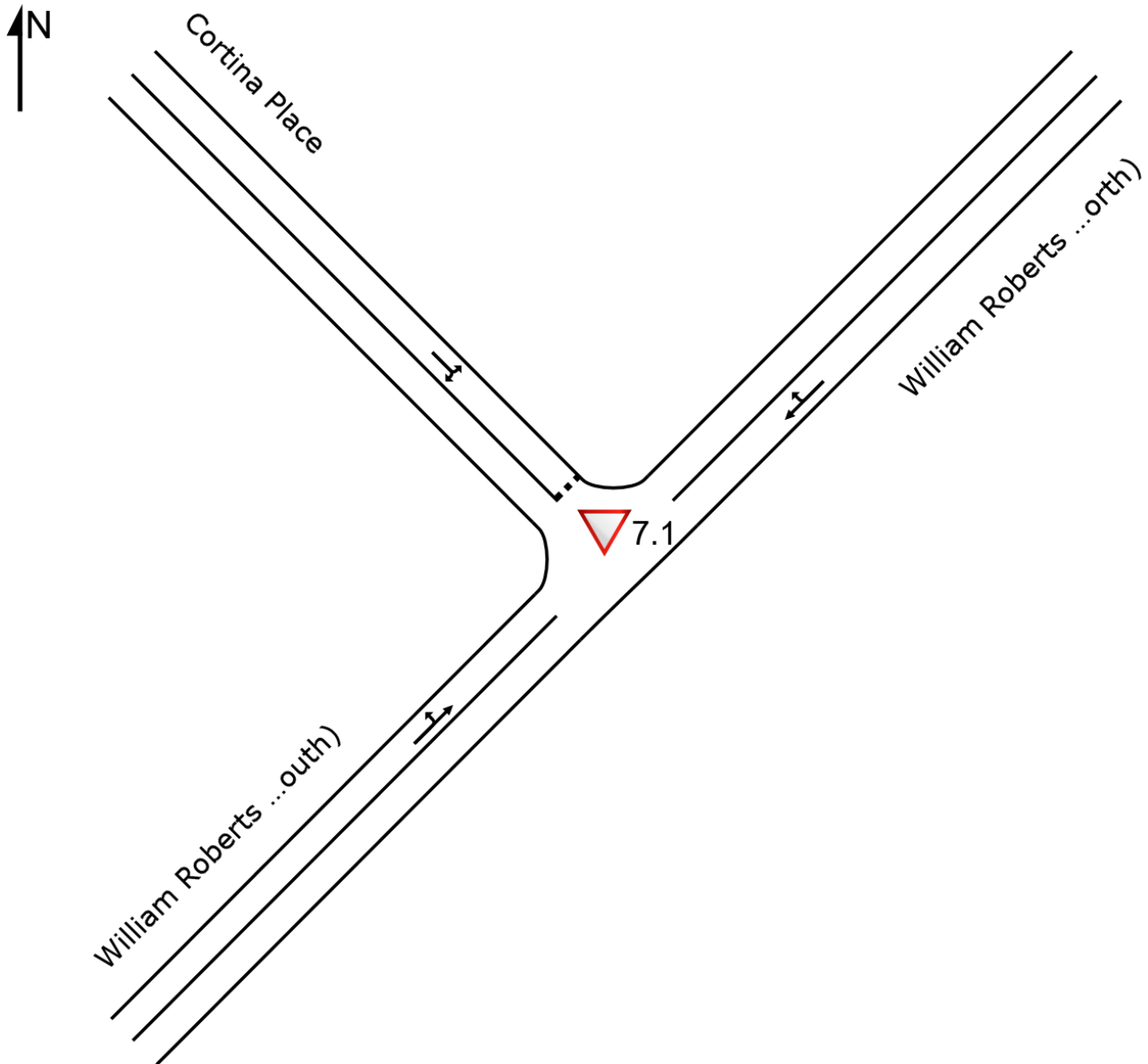
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SITE LAYOUT

▽ Site: 7.1 [7.1 William Roberts Rd / Cortina PI - Import (Site Folder: General)]

Scheme Design
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 7.1 [7.1 William Roberts Rd / Cortina PI - Import (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

Scheme Design
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS [Total HV] veh/h %		ARRIVAL FLOWS [Total HV] veh/h %		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %	
NorthEast: William Roberts Road (North)															
Lane 1	293	7.8	293	7.9	1772	0.165	100	0.5	LOS A	0.3	2.2	Full	243	0.0	0.0
Approach	293	7.8	293	7.9		0.165		0.5	NA	0.3	2.2				
NorthWest: Cortina Place															
Lane 1	31	6.5	31	6.5	1051	0.029	100	3.3	LOS A	0.1	0.8	Full	177	0.0	0.0
Approach	31	6.5	31	6.5		0.029		3.3	LOS A	0.1	0.8				
SouthWest: William Roberts Road (South)															
Lane 1	204	8.8	204	8.8	1785	0.114	100	0.2	LOS A	0.0	0.0	Full	110	0.0	0.0
Approach	204	8.8	204	8.8		0.114		0.2	NA	0.0	0.0				
Intersection	528	8.2	527 ^{N1}	8.2		0.165		0.6	NA	0.3	2.2				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab). Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Approach Lane Flows (veh/h)										
NorthEast: William Roberts Road (North)										
Mov.	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From NE					Cap. veh/h	v/c	%	%	No.	
To Exit:	SW	NW								
Lane 1	256	37	293	7.9	1772	0.165	100	NA	NA	
Approach	256	37	293	7.9		0.165				
NorthWest: Cortina Place										
Mov.	L2	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From NW					Cap. veh/h	v/c	%	%	No.	
To Exit:	NE	SW								
Lane 1	20	11	31	6.5	1051	0.029	100	NA	NA	
Approach	20	11	31	6.5		0.029				
SouthWest: William Roberts Road (South)										
Mov.	L2	T1	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From SW					Cap. veh/h	v/c	%	%	No.	
To Exit:	NW	NE								
Lane 1	24	180	204	8.8	1785	0.114	100	NA	NA	
Approach	24	180	204	8.8		0.114				
Total %HV Deg. Satn (v/c)										

Intersection	527	8.2	0.165
--------------	-----	-----	-------

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
NorthEast Exit: William Roberts Road (North) Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
NorthWest Exit: Cortina Place Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
SouthWest Exit: William Roberts Road (South) Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									

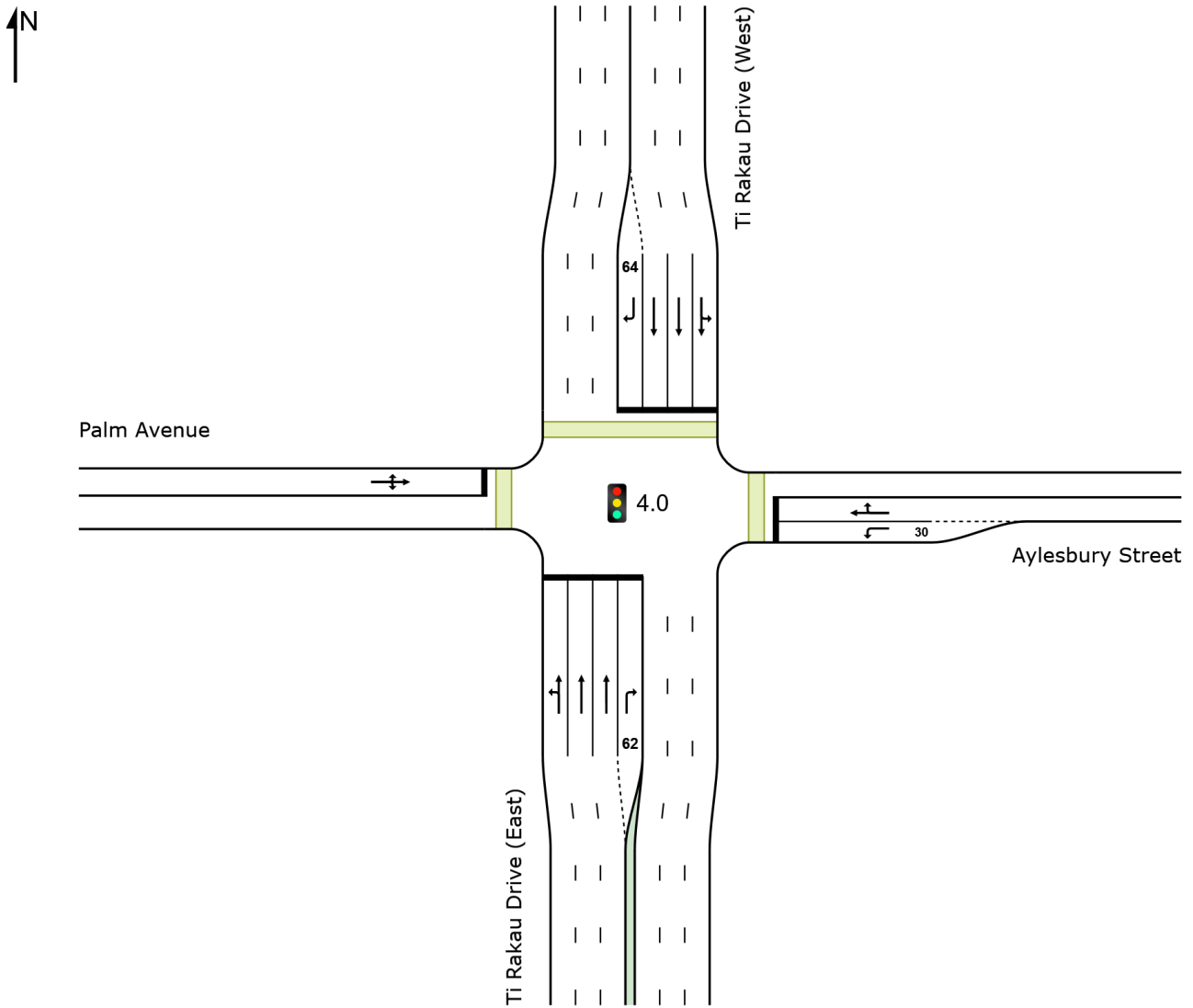
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SITE LAYOUT

Site: 4.0 [4.0 Palm Ave / Aylesbury St - Import (Site Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

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LANE SUMMARY

Site: 4.0 [4.0 Palm Ave / Aylesbury St - Import (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 137 seconds (Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total HV]	%	[Total HV]	%						[Veh Dist]	m				
South: Ti Rakau Drive (East)															
Lane 1	374	6.1	357	6.1	820	0.435	100	31.8	LOS C	15.5	114.3	Full	110	0.0	8.5
Lane 2	380	10.6	363	10.6	834	0.435	100	27.1	LOS C	15.0	114.8	Full	110	0.0	8.9
Lane 3	380	6.5	362	6.4	833 ¹	0.435	100	27.9	LOS C	15.5	114.6	Full	110	0.0	8.7
Lane 4	23	4.3	22	4.3	225	0.098	100	60.7	LOS E	1.3	9.5	Short	62	0.0	NA
Approach	1157	7.7	1104 ^{N1}	7.6		0.435		29.5	LOS C	15.5	114.8				
East: Aylesbury Street															
Lane 1	10	0.0	10	0.0	451	0.022	100	27.2	LOS C	0.4	2.7	Short	30	0.0	NA
Lane 2	20	0.0	20	0.0	236	0.085	100	57.8	LOS E	1.2	8.3	Full	40	0.0	0.0
Approach	30	0.0	30	0.0		0.085		47.6	LOS D	1.2	8.3				
North: Ti Rakau Drive (West)															
Lane 1	540	8.3	531	8.4	845	0.628	100	30.3	LOS C	25.3	190.0	Full	174	0.0	12.9
Lane 2	271	7.8	266	7.9	424	0.628	100	31.7	LOS C	13.2	98.7	Full	174	-50.0 ^{N3}	0.0
Lane 3	273	6.5	268	6.5	428	0.628	100	32.1	LOS C	13.5	99.6	Full	174	-50.0 ^{N3}	0.0
Lane 4	21	0.0	21	0.0	232	0.089	100	60.5	LOS E	1.2	8.6	Short	64	0.0	NA
Approach	1106	7.6	1086 ^{N1}	7.6		0.628		31.7	LOS C	25.3	190.0				
West: Palm Avenue															
Lane 1	135	4.4	135	4.4	138	0.981	100	111.4	LOS F	12.3	89.6	Full	87	-31.5 ^{N3}	7.7
Approach	135	4.4	135	4.4		0.981		111.4	LOS F	12.3	89.6				
Intersection	2428	7.4	2355 ^{N1}	7.6		0.981		35.4	LOS D	25.3	190.0				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

Approach Lane Flows (veh/h)											
South: Ti Rakau Drive (East)											
Mov. From S To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.	
	W	N	E								
Lane 1	32	324	-	357	6.1	820	0.435	100	NA	NA	
Lane 2	-	363	-	363	10.6	834	0.435	100	NA	NA	
Lane 3	-	362	-	362	6.4	833 ¹	0.435	100	NA	NA	
Lane 4	-	-	22	22	4.3	225	0.098	100	0.0	3	

Approach	32	1049	22	1104	7.6		0.435				
East: Aylesbury Street											
Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	
From E						Cap.	Satn	Util.	SL	Ov.	Lane
To Exit:	S	W	N			veh/h	v/c	%	%	%	No.
Lane 1	10	-	-	10	0.0	451	0.022	100	0.0	2	
Lane 2	-	10	10	20	0.0	236	0.085	100	NA	NA	
Approach	10	10	10	30	0.0		0.085				
North: Ti Rakau Drive (West)											
Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	
From N						Cap.	Satn	Util.	SL	Ov.	Lane
To Exit:	E	S	W			veh/h	v/c	%	%	%	No.
Lane 1	10	521	-	531	8.4	845	0.628	100	NA	NA	
Lane 2	-	266	-	266	7.9	424	0.628	100	NA	NA	
Lane 3	-	268	-	268	6.5	428	0.628	100	NA	NA	
Lane 4	-	-	21	21	0.0	232	0.089	100	0.0	3	
Approach	10	1056	21	1086	7.6		0.628				
West: Palm Avenue											
Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	
From W						Cap.	Satn	Util.	SL	Ov.	Lane
To Exit:	N	E	S			veh/h	v/c	%	%	%	No.
Lane 1	63	10	62	135	4.4	138	0.981	100	NA	NA	
Approach	63	10	62	135	4.4		0.981				
Total %HV Deg. Satn (v/c)											
Intersection	2355	7.6		0.981							

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- 1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

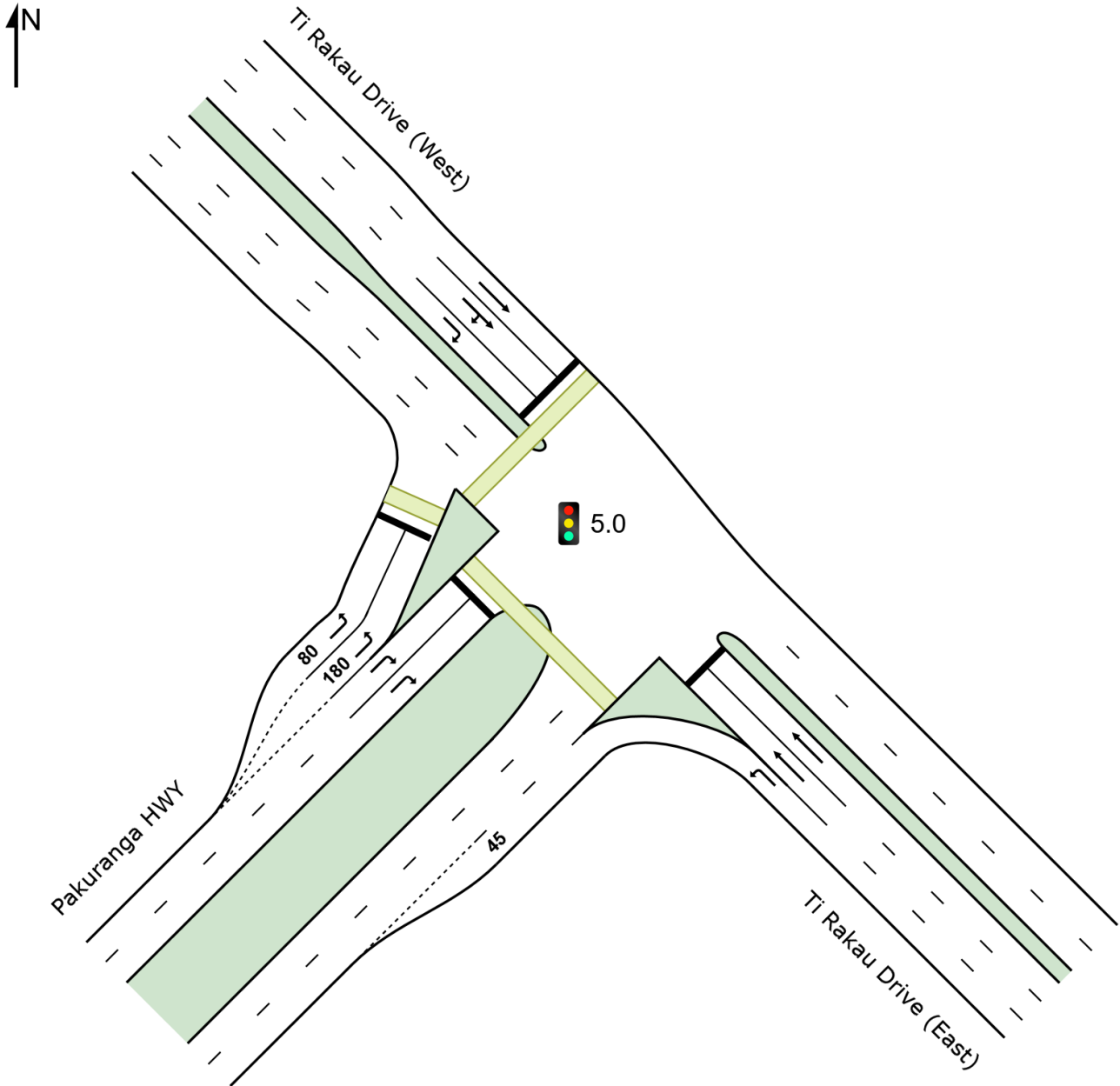
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
South Exit: Ti Rakau Drive (East) Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
Full Length Lane	2		Merge Analysis not applied.									
Full Length Lane	3		Merge Analysis not applied.									
East Exit: Aylesbury Street Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
North Exit: Ti Rakau Drive (West) Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
Full Length Lane	2		Merge Analysis not applied.									
Full Length Lane	3		Merge Analysis not applied.									
West Exit: Palm Avenue Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									

SITE LAYOUT

Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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LANE SUMMARY

Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 89 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV %	[Total veh/h	HV %						[Veh	Dist] m				
SouthEast: Ti Rakau Drive (East)															
Lane 1	1572	9.6	1405	9.6	1702	0.825	100	98.3	LOS F	0.0	0.0	Full	91	0.0	0.0
Lane 2	258	11.3	231	11.5	351	0.659	100	36.1	LOS D	9.6	73.9	Full	91	-8.5 ^{N3}	0.0
Lane 3	256	11.3	229	11.5	348	0.659	100	36.1	LOS D	9.5	73.2	Full	91	-8.9 ^{N3}	0.0
Approach	2086	10.0	1865 ^{N1}	10.1		0.825		82.9	LOS F	9.6	73.9				
NorthWest: Ti Rakau Drive (West)															
Lane 1	154	24.0	152	24.2	506	0.300	33 ⁵	25.9	LOS C	5.1	43.1	Full	110	0.0	0.0
Lane 2	499	5.2	490	5.2	546	0.898	100	50.4	LOS D	24.6 ^{N4}	179.5 ^{N4}	Full	110	0.0	50.0
Lane 3	486	5.2	478	5.2	532	0.898	100	50.7	LOS D	24.6 ^{N4}	179.5 ^{N4}	Full	110	0.0	50.0
Approach	1139	7.7	1120 ^{N1}	7.8		0.898		47.2	LOS D	24.6	179.5				
SouthWest: Pakuranga HWY															
Lane 1	325	4.9	325	4.9	506	0.642	100	36.8	LOS D	12.4	90.6	Short	80	-8.5 ^{N3}	NA
Lane 2	323	4.9	323	4.9	504	0.642	100	36.8	LOS D	12.4	90.2	Short	180	-8.9 ^{N3}	NA
Lane 3	429	9.3	429	9.3	487	0.882	100	52.2	LOS D	21.7	163.7	Full	1650	0.0	0.0
Lane 4	434	9.3	434	9.3	492	0.882	100	52.1	LOS D	21.9	165.2	Full	1650	0.0	0.0
Approach	1511	7.4	1511	7.4		0.882		45.6	LOS D	21.9	165.2				
Intersection	4736	8.6	4496 ^{N1}	9.1		0.898		61.5	LOS E	24.6	179.5				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

⁵ Lane under-utilisation found by the program

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)										
SouthEast: Ti Rakau Drive (East)										
Mov. From SE To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SW	NW								
Lane 1	1405	-	1405	9.6	1702	0.825	100	NA	NA	
Lane 2	-	231	231	11.5	351	0.659	100	NA	NA	
Lane 3	-	229	229	11.5	348	0.659	100	NA	NA	
Approach	1405	460	1865	10.1		0.825				
NorthWest: Ti Rakau Drive (West)										
Mov. From NW To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SE	SW								

Lane 1	152	-	152	24.2	506	0.300	33 ⁵	NA	NA
Lane 2	-	490	490	5.2	546	0.898	100	NA	NA
Lane 3	-	478	478	5.2	532	0.898	100	NA	NA
Approach	152	968	1120	7.8		0.898			
SouthWest: Pakuranga HWY									
Mov. From SW To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	325	-	325	4.9	506	0.642	100	16.3	2
Lane 2	323	-	323	4.9	504	0.642	100	0.0	4
Lane 3	-	429	429	9.3	487	0.882	100	NA	NA
Lane 4	-	434	434	9.3	492	0.882	100	NA	NA
Approach	648	863	1511	7.4		0.882			
Total %HV Deg. Satn (v/c)									
Intersection	4496	9.1		0.898					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

5 Lane under-utilisation found by the program

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
SouthEast Exit: Ti Rakau Drive (East) Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
Full Length Lane	2		Merge Analysis not applied.									
NorthWest Exit: Ti Rakau Drive (West) Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
Full Length Lane	2		Merge Analysis not applied.									
Full Length Lane	3		Merge Analysis not applied.									
SouthWest Exit: Pakuranga HWY Merge Type: Priority												
Exit Short Lane	1	45	0.0	490	503	3.00	2.00	1405	1283	1.095	0.8	93.7
Merge Lane	2	-	100.0	Merge Lane is not Opposed			490	1800	0.272	0.0	0.0	

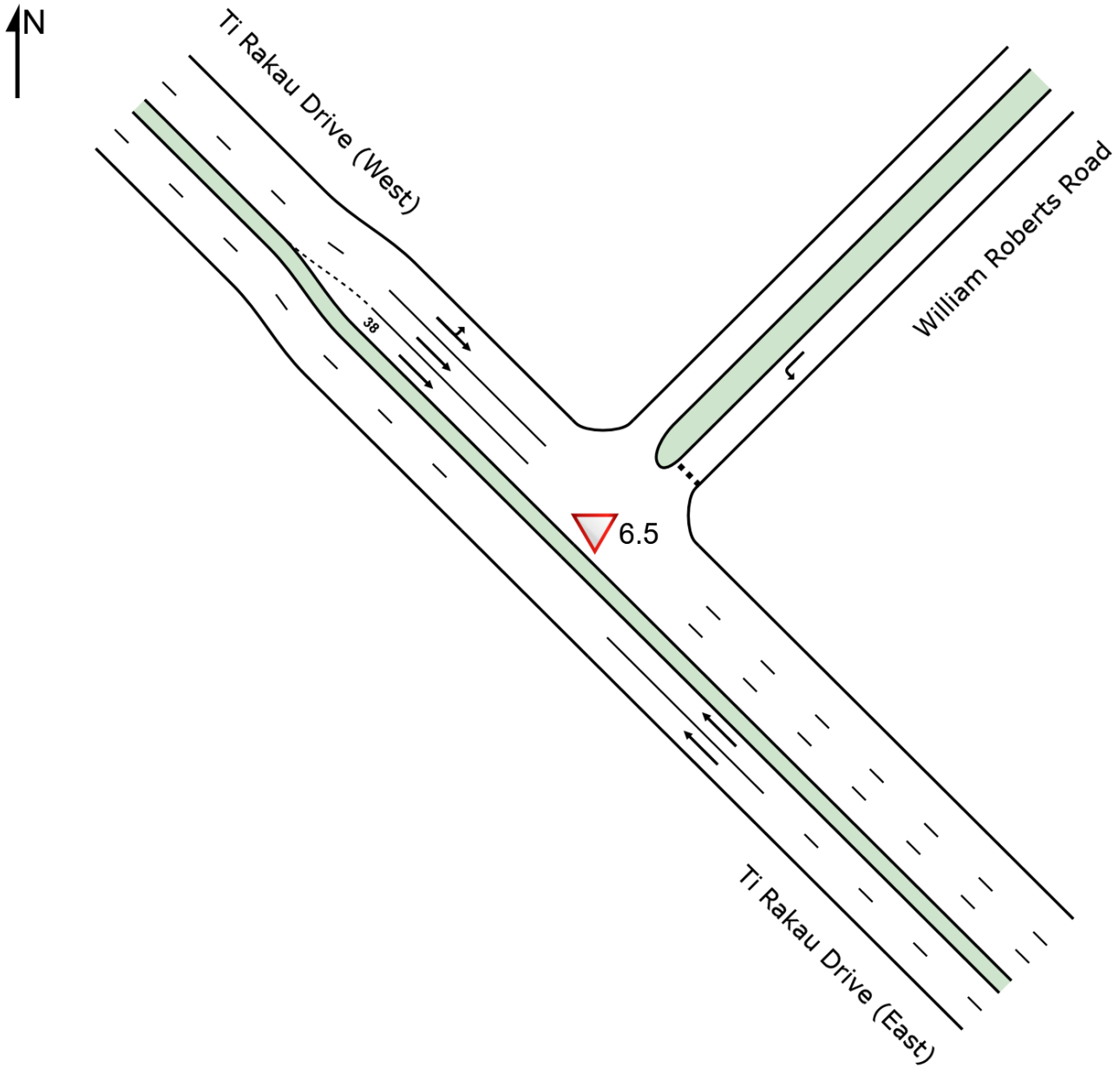
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SITE LAYOUT

▽ Site: 6.5 [6.5 William Roberts Rd / Ti Rakau Dr - Import (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

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LANE SUMMARY

Site: 6.5 [6.5 William Roberts Rd / Ti Rakau Dr - Import (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]						[Veh]	[Dist m]				
SouthEast: Ti Rakau Drive (East)															
Lane 1	998	10.1	885	10.2	1781	0.497	100	0.0	LOS A	0.0	0.0	Full	18	0.0	0.0
Lane 2	987	10.1	875	10.2	1762	0.497	100	0.0	LOS A	0.0	0.0	Full	18	0.0	0.0
Approach	1985	10.1	1760 ^{N1}	10.2		0.497		0.0	NA	0.0	0.0				
NorthEast: William Roberts Road															
Lane 1	263	8.0	263	8.0	553	0.475	100	2.9	LOS A	1.1	8.1	Full	110	-50.0 ^{N7}	0.0
Approach	263	8.0	263	8.0		0.475		2.9	LOS A	1.1	8.1				
NorthWest: Ti Rakau Drive (West)															
Lane 1	348	10.2	348	10.2	1827	0.190	100	2.7	LOS A	0.0	0.0	Full	97	0.0	0.0
Lane 2	332	12.1	332	12.1	1742	0.190	100	0.0	LOS A	4.1 ^{N5}	31.7 ^{N5}	Full	97	0.0	0.0
Lane 3	332	12.1	332	12.1	1742	0.190	100	0.0	LOS A	0.0	0.0	Short	38	0.0	NA
Approach	1013	11.5	1011 ^{N1}	11.5		0.190		0.9	NA	4.1	31.7				
Intersection	3261	10.4	3034 ^{N1}	11.1		0.497		0.6	NA	4.1	31.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

N5 Continuous Lane results determined by Back of Queue values of downstream lanes (proportional to lane movement flows).

N7 The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)									
SouthEast: Ti Rakau Drive (East)									
Mov. From SE To Exit:	T1	Total	%HV		Deg. Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	NW								
Lane 1	885	885	10.2		1781	0.497	100	NA	NA
Lane 2	875	875	10.2		1762	0.497	100	NA	NA
Approach	1760	1760	10.2			0.497			
NorthEast: William Roberts Road									
Mov. From NE To Exit:	L2	Total	%HV		Deg. Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	SE								
Lane 1	263	263	8.0		553	0.475	100	NA	NA
Approach	263	263	8.0			0.475			

NorthWest: Ti Rakau Drive (West)										
Mov. From NW To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	NE	SE								
Lane 1	204	144	348	10.2	1827	0.190	100	NA	NA	
Lane 2	-	332	332	12.1	1742	0.190	100	NA	NA	
Lane 3	-	332	332	12.1	1742	0.190	100	0.0	2	
Approach	204	807	1011	11.5		0.190				
Total %HV Deg. Satn (v/c)										
Intersection	3034	11.1		0.497						

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

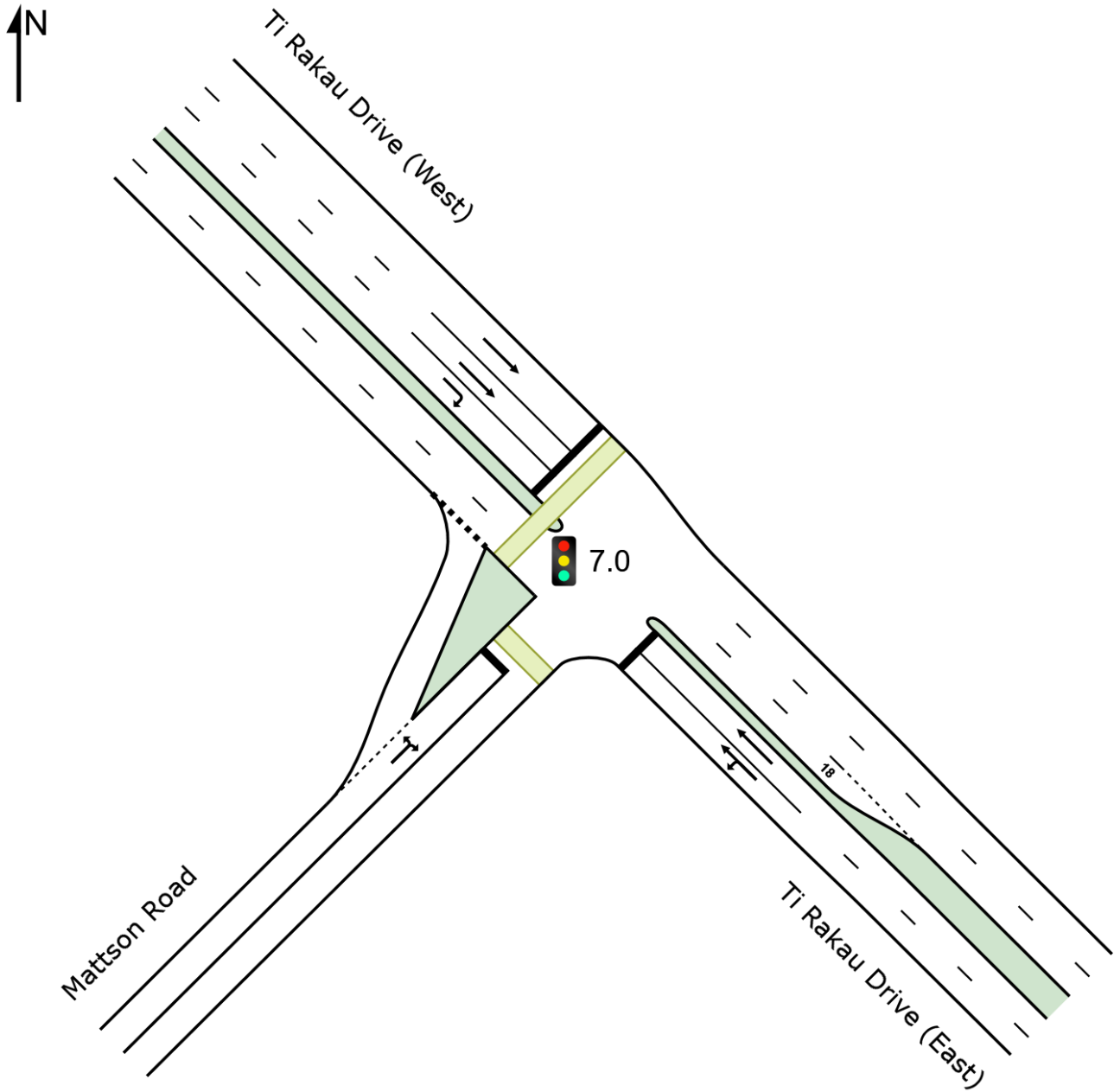
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
SouthEast Exit: Ti Rakau Drive (East)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.
Full Length Lane	3											Merge Analysis not applied.
NorthEast Exit: William Roberts Road												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
NorthWest Exit: Ti Rakau Drive (West)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.

SITE LAYOUT

Site: 7.0 [7.0 Mattson Rd/ Ti Rakau Dr (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 7.0 [7.0 Mattson Rd/ Ti Rakau Dr (Site Folder: General)]

Network: N101 [AM
(Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 80 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
	veh/h	%	veh/h	%	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
SouthEast: Ti Rakau Drive (East)															
Lane 1	969	10.3	855	10.4	962	0.889	100	29.1	LOS C	37.5	285.5	Full	187	0.0	43.8
Lane 2	976	10.3	861	10.4	968	0.889	100	29.2	LOS C	37.7	287.2	Full	187	0.0	44.3
Approach	1945	10.3	1716 ^N	10.4		0.889		29.1	LOS C	37.7	287.2				
NorthWest: Ti Rakau Drive (West)															
Lane 1	525	11.3	524	11.3	1318	0.398	100	5.3	LOS A	3.8 ^{N4}	29.4 ^{N4}	Full	18	0.0	50.0
Lane 2	494	11.3	493	11.3	1239	0.398	100	5.3	LOS A	3.8 ^{N4}	29.4 ^{N4}	Full	18	0.0	50.0
Lane 3	52	7.7	52	7.7	129	0.401	100	43.5	LOS D	2.1	15.6	Full	18	0.0	0.0
Approach	1071	11.1	1069 ^N	11.1		0.401		7.2	LOS A	3.8	29.4				
SouthWest: Mattson Road															
Lane 1	136	4.4	136	4.4	515	0.264	100	25.0	LOS C	4.3	31.0	Full	282	0.0	0.0
Approach	136	4.4	136	4.4		0.264		25.0	LOS C	4.3	31.0				
Intersection	3152	10.3	2921 ^N	11.1		0.889		20.9	LOS C	37.7	287.2				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)										
SouthEast: Ti Rakau Drive (East)										
Mov.	L2	T1	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From SE To Exit:	SW	NW			veh/h	v/c	%	%		
Lane 1	21	834	855	10.4	962	0.889	100	NA	NA	NA
Lane 2	-	861	861	10.4	968	0.889	100	NA	NA	NA
Approach	21	1695	1716	10.4		0.889				
NorthWest: Ti Rakau Drive (West)										
Mov.	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From NW To Exit:	SE	SW			veh/h	v/c	%	%		
Lane 1	524	-	524	11.3	1318	0.398	100	NA	NA	NA
Lane 2	493	-	493	11.3	1239	0.398	100	NA	NA	NA
Lane 3	-	52	52	7.7	129	0.401	100	NA	NA	NA
Approach	1017	52	1069	11.1		0.401				
SouthWest: Mattson Road										
Mov.	L2	R2	Total	%HV	Deg.	Lane Util.	Prob.	Ov.		

From SW To Exit:	NW	SE			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	72	64	136	4.4	515	0.264	100	NA	NA
Approach	72	64	136	4.4		0.264			
Total %HV Deg. Satn (v/c)									
Intersection	2921	11.1		0.889					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East) Merge Type: Priority												
Exit Short Lane	3	18	0.0	493	521	3.00	2.00	64	1265	0.051	0.9	1.1
Merge Lane	2	-	100.0	Merge Lane is not Opposed				493	1800	0.274	0.0	0.0
NorthWest Exit: Ti Rakau Drive (West) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
SouthWest Exit: Mattson Road Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										

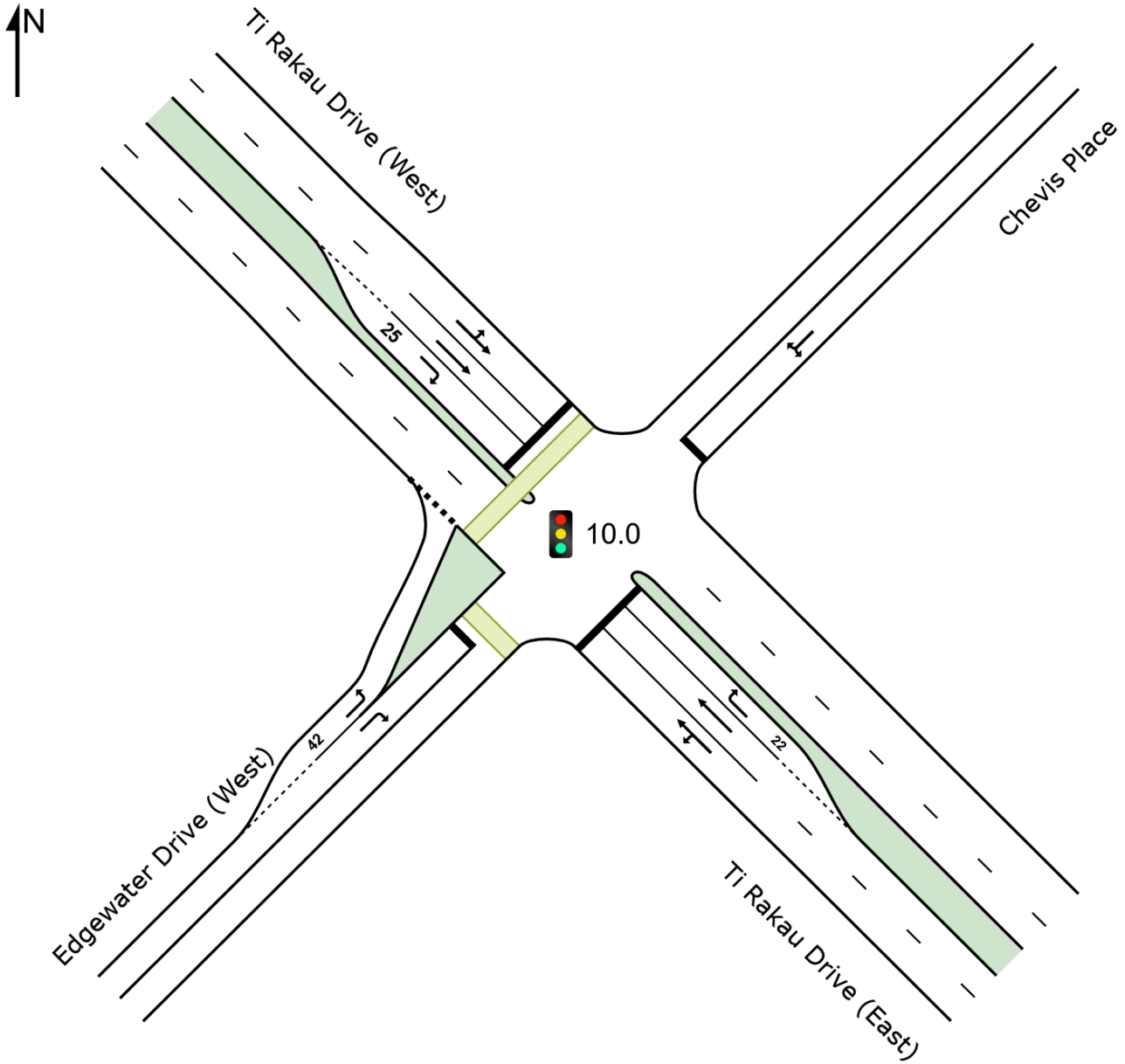
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SITE LAYOUT

Site: 10.0 [10.0 Edgewater Dr (West) / Chevis Pl (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 10.0 [10.0 Edgewater Dr (West) / Chevis Pl (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 107 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total]	[HV]	[Total]	[HV]						[Veh]	[Dist]				
SouthEast: Ti Rakau Drive (East)															
Lane 1	924	9.8	854	10.0	961	0.888	100	34.6	LOS C	34.8 ^{N4}	264.4 ^{N4}	Full	162	0.0	50.0
Lane 2	904	10.4	835	10.6	940 ¹	0.888	100	34.7	LOS C	34.6 ^{N4}	264.4 ^{N4}	Full	162	0.0	50.0
Lane 3	10	0.0	9	0.0	100	0.092	100	59.1	LOS E	0.5	3.4	Short	22	0.0	NA
Approach	1838	10.0	1698 ^{N1}	10.2		0.888		34.8	LOS C	34.8	264.4				
NorthEast: Chevis Place															
Lane 1	28	3.6	28	3.6	102	0.276	100	60.4	LOS E	1.5	10.8	Full	138	0.0	0.0
Approach	28	3.6	28	3.6		0.276		60.4	LOS E	1.5	10.8				
NorthWest: Ti Rakau Drive (West)															
Lane 1	463	11.3	445	11.3	974	0.457	100	17.1	LOS B	14.4	110.6	Full	68	0.0	49.7
Lane 2	397	11.5	381	11.6	834 ¹	0.457	100	16.5	LOS B	12.0	92.3	Full	68	0.0	32.9
Lane 3	45	13.3	43	13.3	95	0.457	100	61.6	LOS E	2.4	18.5	Short	25	0.0	NA
Approach	905	11.5	870 ^{N1}	11.5		0.457		19.1	LOS B	14.4	110.6				
SouthWest: Edgewater Drive (West)															
Lane 1	118	8.5	118	8.5	619	0.191	100	19.0	LOS B	3.3	24.5	Short	42	0.0	NA
Lane 2	34	8.8	34	8.8	244	0.140	100	49.0	LOS D	1.6	12.0	Full	789	0.0	0.0
Approach	152	8.6	152	8.6		0.191		25.7	LOS C	3.3	24.5				
Intersection	2923	10.3	2748 ^{N1}	11.0		0.888		29.6	LOS C	34.8	264.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)										
SouthEast: Ti Rakau Drive (East)										
Mov. From SE To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	SW	NW	NE							
Lane 1	88	766	-	854	10.0	961	0.888	100	NA	NA
Lane 2	-	835	-	835	10.6	940 ¹	0.888	100	NA	NA
Lane 3	-	-	9	9	0.0	100	0.092	100	0.0	2
Approach	88	1601	9	1698	10.2		0.888			
NorthEast: Chevis Place										
Mov.	L2	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	

From NE To Exit:	SE	NW				Cap. veh/h	Satn v/c	Util. %	SL %	Ov. %	Lane No.
Lane 1	10	18	28	3.6		102	0.276	100	NA	NA	
Approach	10	18	28	3.6			0.276				
NorthWest: Ti Rakau Drive (West)											
Mov. From NW To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. %	Ov. Lane No.
Lane 1	10	436	-	445	11.3	974	0.457	100	NA	NA	
Lane 2	-	381	-	381	11.6	834 ¹	0.457	100	NA	NA	
Lane 3	-	-	43	43	13.3	95	0.457	100	0.0		2
Approach	10	817	43	870	11.5		0.457				
SouthWest: Edgewater Drive (West)											
Mov. From SW To Exit:	L2	R2	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. %	Ov. Lane No.
Lane 1	118	-	118	8.5		619	0.191	100	0.0		2
Lane 2	-	34	34	8.8		244	0.140	100	NA	NA	
Approach	118	34	152	8.6			0.191				
Total %HV Deg.Satn (v/c)											
Intersection	2748	11.0		0.888							

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- ¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

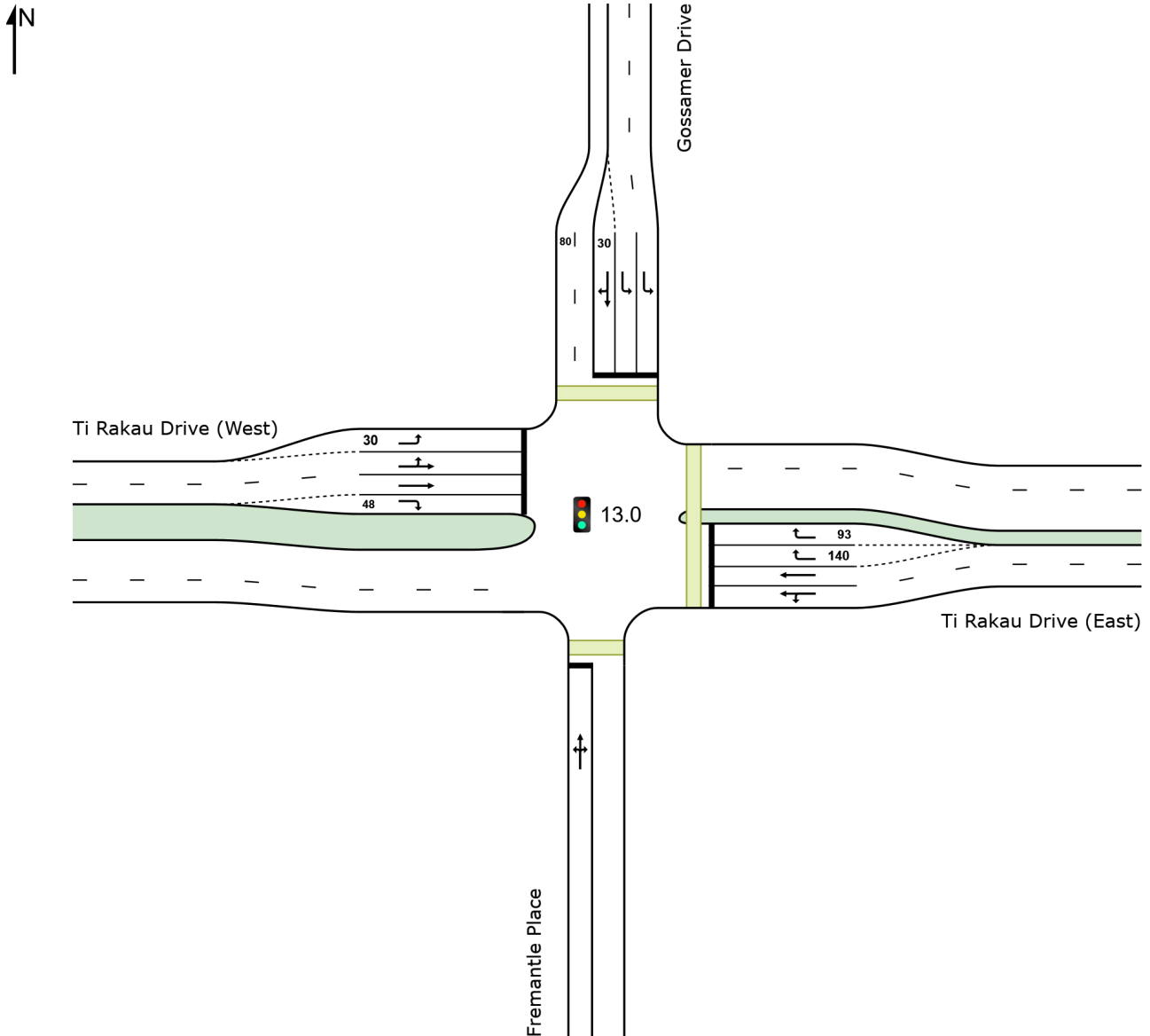
Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East) Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								
Full Length Lane	2		Merge Analysis not applied.								
NorthEast Exit: Chevis Place Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								
NorthWest Exit: Ti Rakau Drive (West) Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								
Full Length Lane	2		Merge Analysis not applied.								
SouthWest Exit: Edgewater Drive (West) Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								

SITE LAYOUT

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: General)]

Scheme Design
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

Scheme Design

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 132 seconds (Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV %	[Total veh/h	HV %						[Veh	Dist] m				
South: Fremantle Place															
Lane 1	50	6.0	50	6.0	82	0.612	100	76.0	LOS E	3.4	25.3	Full	285	0.0	0.0
Approach	50	6.0	50	6.0		0.612		76.0	LOS E	3.4	25.3				
East: Ti Rakau Drive (East)															
Lane 1	784	10.7	784	10.7	752	1.043	100	97.8	LOS F	66.6	508.9	Full	636	0.0	0.0
Lane 2	730	10.8	730	10.8	700 ¹	0.731	100	120.9	LOS F	77.5	592.9	Full	636	0.0	0.0
Lane 3	128	7.8	128	7.8	328	0.389	47 ⁶	31.2	LOS C	3.8	28.6	Short	140	0.0	NA
Lane 4	271	7.8	271	7.8	328	0.827	100	45.1	LOS D	11.6	86.8	Short	93	0.0	NA
Approach	1913	10.1	1913	10.1		1.043		94.7	LOS F	77.5	592.9				
North: Gossamer Drive															
Lane 1	521	8.9	521	8.9	794	0.656	100	23.1	LOS C	19.4	145.9	Full	1010	0.0	0.0
Lane 2	409	8.9	409	8.9	623 ¹	0.656	100	21.5	LOS C	13.9	104.4	Full	1010	0.0	0.0
Lane 3	291	5.8	291	5.8	230 ¹	1.267	100	315.6	LOS F	47.7	350.5	Short	30	0.0	NA
Approach	1221	8.2	1221	8.2		1.267		92.3	LOS F	47.7	350.5				
West: Ti Rakau Drive (West)															
Lane 1	55	9.1	52	9.1	907	0.057	8 ⁵	14.1	LOS B	1.1	8.4	Short	30	0.0	NA
Lane 2	396	11.4	373	11.6	510 ¹	0.731	100	42.9	LOS D	21.0	161.5	Full	479	0.0	0.0
Lane 3	418	11.4	394	11.6	539 ¹	0.731	100	43.6	LOS D	22.5	173.5	Full	479	0.0	0.0
Lane 4	11	9.1	10	9.1	218	0.048	100	59.3	LOS E	0.6	4.4	Short	48	0.0	NA
Approach	880	11.3	829 ^{N1}	11.4		0.731		41.6	LOS D	22.5	173.5				
Intersection	4064	9.7	4013 ^{N1}	9.9		1.267		82.8	LOS F	77.5	592.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

⁵ Lane under-utilisation found by the program

⁶ Lane under-utilisation due to downstream effects

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)											
South: Fremantle Place											
Mov. From S To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.	
	W	N	E								
Lane 1	23	10	17	50	6.0	82	0.612	100	NA	NA	
Approach	23	10	17	50	6.0		0.612				
East: Ti Rakau Drive (East)											

Mov. From E To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	18	766	-	784	10.7	752	1.043	100	NA	NA
Lane 2	-	730	-	730	10.8	700 ¹	1.043	100	NA	NA
Lane 3	-	-	128	128	7.8	328	0.389	47 ⁶	0.0	2
Lane 4	-	-	271	271	7.8	328	0.827	100	0.0	3
Approach	18	1496	399	1913	10.1		1.043			
North: Gossamer Drive										
Mov. From N To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	521	-	-	521	8.9	794	0.656	100	NA	NA
Lane 2	409	-	-	409	8.9	623 ¹	0.656	100	NA	NA
Lane 3	-	11	280	291	5.8	230 ¹	1.267	100	100.0	2
Approach	930	11	280	1221	8.2		1.267			
West: Ti Rakau Drive (West)										
Mov. From W To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	52	-	-	52	9.1	907	0.057	8 ⁵	0.0	2
Lane 2	-	373	-	373	11.6	510 ¹	0.731	100	NA	NA
Lane 3	-	394	-	394	11.6	539 ¹	0.731	100	NA	NA
Lane 4	-	-	10	10	9.1	218	0.048	100	0.0	3
Approach	52	767	10	829	11.4		0.731			
Total %HV Deg. Satn (v/c)										
Intersection	4013	9.9		1.267						

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- 1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
- 5 Lane under-utilisation found by the program
- 6 Lane under-utilisation due to downstream effects

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec		
South Exit: Fremantle Place Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Ti Rakau Drive (East) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: Gossamer Drive Merge Type: Zipper												
Exit Short Lane	1	80	50.0	141	146	2.50	2.00	179	1631	0.110	0.0	0.1
Merge Lane	2	-	50.0	90	93	2.50	2.00	281	1694	0.166	0.0	0.0
West Exit: Ti Rakau Drive (West) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

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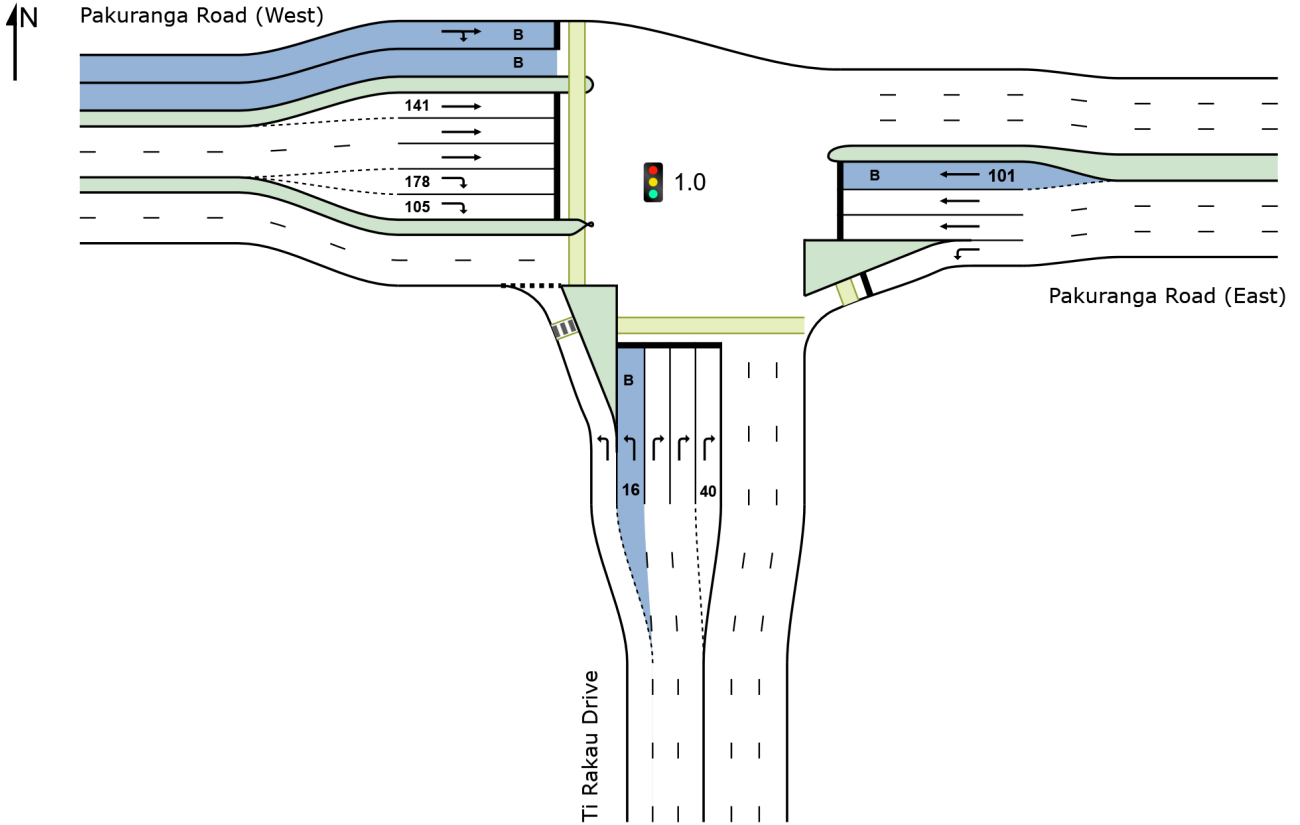
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SITE LAYOUT

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 79 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV %	[Total veh/h	HV %						[Veh	Dist] m				
South: Ti Rakau Drive															
Lane 1	767	4.8	753	4.8	1142 ¹	0.659	100	9.3	LOS A	13.3	97.0	Full	174	0.0	0.0
Lane 2 (B)	13	100.0	13	100.0	129	0.101	100	44.1	LOS D	0.5	6.5	Short	16	0.0	NA
Lane 3	382	4.1	375	4.0	432	0.868	100	45.3	LOS D	16.7	120.6	Full	174	0.0	0.0
Lane 4	325	4.1	319	4.0	367 ¹	0.868	100	45.0	LOS D	13.9	100.4	Full	174	0.0	0.0
Lane 5	325	4.1	319	4.0	367 ¹	0.868	100	45.0	LOS D	13.9	100.4	Short	40	0.0	NA
Approach	1811	5.1	1778 ^N ₁	5.0		0.868		30.0	LOS C	16.7	120.6				
East: Pakuranga Road (East)															
Lane 1	787	4.7	749	4.7	973	0.770	100	22.1	LOS C	23.6	171.6	Full	113	0.0	43.2
Lane 2	406	10.2	386	10.3	414	0.932	100	51.9	LOS D	19.7	149.7	Full	113	0.0	30.6
Lane 3	406	10.2	386	10.3	414	0.932	100	51.9	LOS D	19.7	149.7	Full	113	0.0	30.6
Lane 4 (B)	11	100.0	11	100.0	91	0.121	100	41.6	LOS D	0.4	5.6	Short	101	0.0	NA
Approach	1609	8.1	1533 ^N ₁	8.2		0.932		37.3	LOS D	23.6	171.6				
West: Pakuranga Road (West)															
Lane 1 (B)	42	100.0	42	100.0	87	0.484	100	41.4	LOS D	1.7	21.6	Full	388	0.0	0.0
Lane 2	450	7.1	450	7.1	563	0.799	100	31.5	LOS C	17.7	131.2	Short	141	0.0	NA
Lane 3	450	7.1	450	7.1	563	0.799	100	31.5	LOS C	17.7	131.2	Full	388	0.0	0.0
Lane 4	450	7.1	450	7.1	563	0.799	100	31.5	LOS C	17.7	131.2	Full	388	0.0	0.0
Lane 5	228	8.8	228	8.8	264	0.861	100	50.1	LOS D	10.2	76.4	Short	178	0.0	NA
Lane 6	228	8.8	228	8.8	264	0.861	100	50.1	LOS D	10.2	76.4	Short	105	0.0	NA
Approach	1847	9.6	1847	9.6		0.861		36.4	LOS D	17.7	131.2				
Intersection	5267	7.6	5157 ^N ₁	7.8		0.932		34.4	LOS C	23.6	171.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)										
South: Ti Rakau Drive										
Mov. From S To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. %	Ov. Lane No.
	W	E								
Lane 1	753	-	753	4.8	1142 ¹	0.659	100	NA	NA	
Lane 2	13	-	13	100.0	129	0.101	100	0.0	1	
Lane 3	-	375	375	4.0	432	0.868	100	NA	NA	
Lane 4	-	319	319	4.0	367 ¹	0.868	100	NA	NA	

Lane 5	-	319	319	4.0	367 ¹	0.868	100	91.5	4
Approach	766	1012	1778	5.0		0.868			
East: Pakuranga Road (East)									
Mov. From E To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	749	-	749	4.7	973	0.770	100	NA	NA
Lane 2	-	386	386	10.3	414	0.932	100	NA	NA
Lane 3	-	386	386	10.3	414	0.932	100	NA	NA
Lane 4	-	11	11	100.0	91	0.121	100	0.0	3
Approach	749	783	1533	8.2		0.932			
West: Pakuranga Road (West)									
Mov. From W To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	21	21	42	100.0	87	0.484	100	NA	NA
Lane 2	450	-	450	7.1	563	0.799	100	0.0	3
Lane 3	450	-	450	7.1	563	0.799	100	NA	NA
Lane 4	450	-	450	7.1	563	0.799	100	NA	NA
Lane 5	-	228	228	8.8	264	0.861	100	0.0	4
Lane 6	-	228	228	8.8	264	0.861	100	0.0	5
Approach	1371	476	1847	9.6		0.861			
Total %HV Deg. Satn (v/c)									
Intersection	5157	7.8		0.932					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- 1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

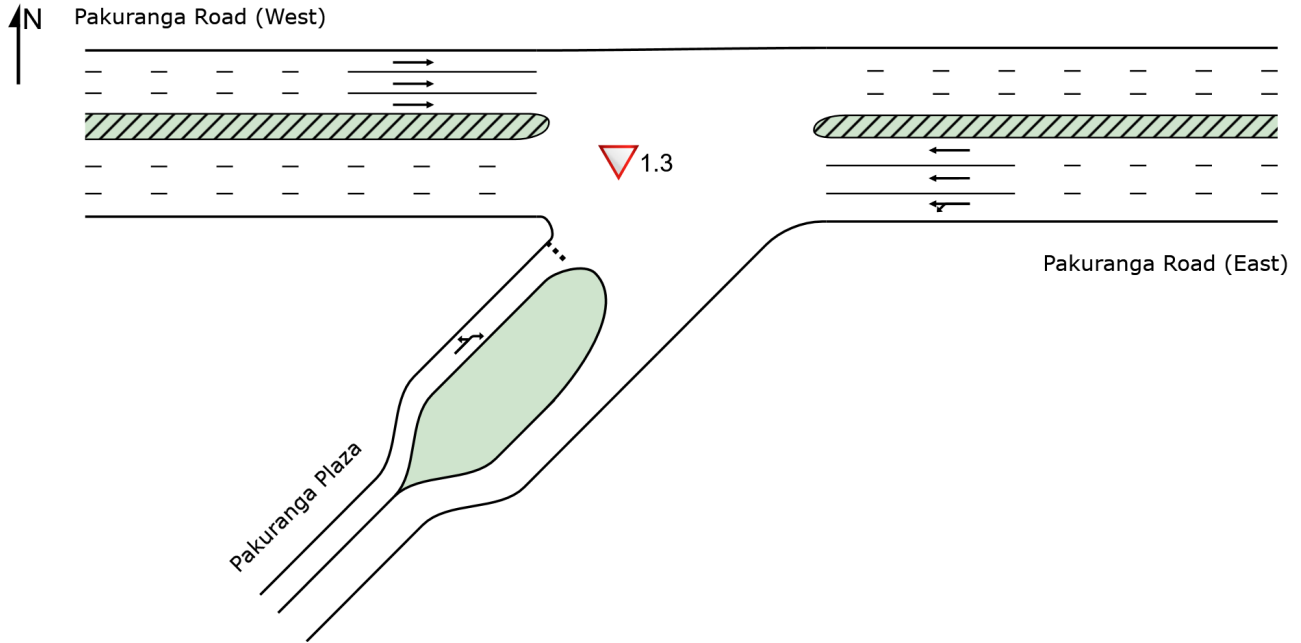
Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate % veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Ti Rakau Drive											
Merge Type: Not Applied											
Full Length Lane	1										
Full Length Lane	2										
Full Length Lane	3										
East Exit: Pakuranga Road (East)											
Merge Type: Not Applied											
Full Length Lane	1										
Full Length Lane	2										
Full Length Lane	3										
West Exit: Pakuranga Road (West)											
Merge Type: Not Applied											
Full Length Lane	1										
Full Length Lane	2										
Full Length Lane	3										

SITE LAYOUT

▽ Site: 1.3 [1.3 Mall/ Pakuranga Rd - PD (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandenneever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.3\CS 1.3 PM.sip9

LANE SUMMARY

Site: 1.3 [1.3 Mall/ Pakuranga Rd - PD (Site Folder: General)]

Network: N101 [AM
(Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS [Total HV] veh/h %		ARRIVAL FLOWS [Total HV] veh/h %		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh Dist] m		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
East: Pakuranga Road (East)															
Lane 1	508	8.7	508	8.7	1846	0.275	100	1.0	LOS A	0.0	0.0	Full	152	0.0	0.0
Lane 2	515	7.3	515	7.3	1872	0.275	100	0.0	LOS A	0.0	0.0	Full	152	0.0	0.0
Lane 3	515	7.3	515	7.3	1872	0.275	100	0.0	LOS A	0.0	0.0	Full	152	0.0	0.0
Approach	1539	7.7	1539	7.7		0.275		0.4	NA	0.0	0.0				
West: Pakuranga Road (West)															
Lane 1	797	6.6	792	6.6	1802	0.439	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Lane 2	797	6.6	792	6.6	1802	0.439	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Lane 3	792	6.6	787	6.6	1792	0.439	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Approach	2386	6.6	2371 ^{N1}	6.6		0.439		0.0	NA	0.0	0.0				
SouthWest: Pakuranga Plaza															
Lane 1	108	6.5	108	6.5	56	1.929	100	966.9	LOS F	38.6	284.9	Full	196	-8.5 ^{N7}	17.4
Approach	108	6.5	108	6.5		1.929		966.9	LOS F	38.6	284.9				
Intersection	4033	7.0	4018 ^{N1}	7.1		1.929		26.1	NA	38.6	284.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

N7 The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)										
East: Pakuranga Road (East)										
Mov. From E To Exit:	L1	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SW	W								
Lane 1	94	414	508	8.7	1846	0.275	100	NA	NA	
Lane 2	-	515	515	7.3	1872	0.275	100	NA	NA	
Lane 3	-	515	515	7.3	1872	0.275	100	NA	NA	
Approach	94	1445	1539	7.7		0.275				
West: Pakuranga Road (West)										
Mov. From W To Exit:	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.		
	E									
Lane 1	792	792	6.6	1802	0.439	100	NA	NA		
Lane 2	792	792	6.6	1802	0.439	100	NA	NA		

Lane 3	787	787	6.6		1792	0.439	100	NA	NA
Approach	2371	2371	6.6			0.439			
SouthWest: Pakuranga Plaza									
Mov. From SW To Exit:	L3 W	R1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.
Lane 1	98	10	108	6.5	56	1.929	100	NA	NA
Approach	98	10	108	6.5		1.929			
Total %HV Deg. Satn (v/c)									
Intersection	4018	7.1		1.929					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

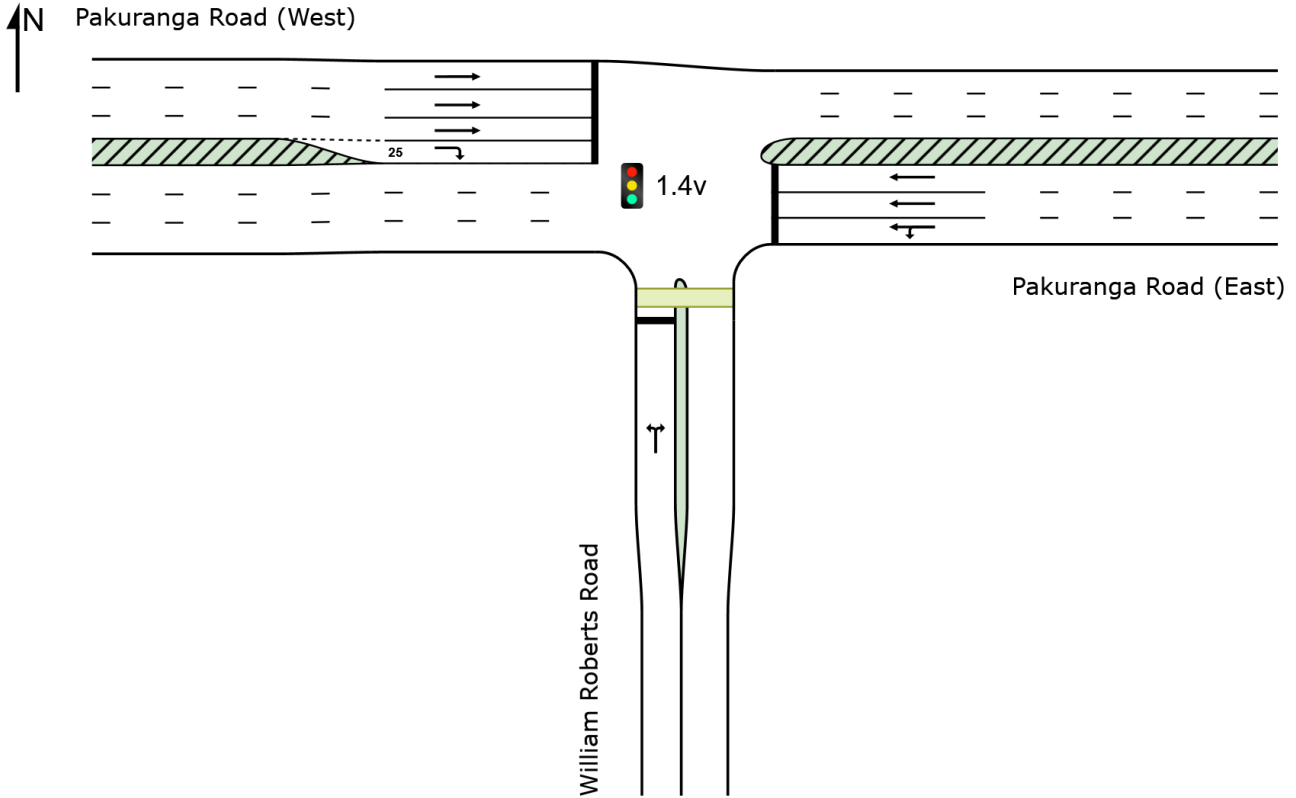
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: Pakuranga Road (East)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											
West Exit: Pakuranga Road (West)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											
SouthWest Exit: Pakuranga Plaza												
Merge Type: Not Applied												
Full Length Lane	1											

SITE LAYOUT

Site: 1.4v [1.4 William Roberts/ Pakuranga Rd - PD - Conversion (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.3\CS 1.3 PM.sip9

LANE SUMMARY

Site: 1.4v [1.4 William Roberts/ Pakuranga Rd - PD - Conversion (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS [Total HV]		ARRIVAL FLOWS [Total HV]		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh Dist]		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			m		m	%	%
South: William Roberts Road															
Lane 1	236	7.2	236	7.2	256	0.921	100	92.0	LOS F	20.7	154.0	Full	244	-28.7 ^{N7}	0.0
Approach	236	7.2	236	7.2		0.921		92.0	LOS F	20.7	154.0				
East: Pakuranga Road (East)															
Lane 1	490	7.3	490	7.3	1114	0.440	100	12.3	LOS B	12.7	94.7	Full	184	0.0	0.0
Lane 2	488	7.6	488	7.6	1110	0.440	100	15.1	LOS B	15.7	117.2	Full	184	0.0	0.0
Lane 3	493	7.6	493	7.6	1122	0.440	100	15.0	LOS B	15.8	118.0	Full	184	0.0	0.0
Approach	1471	7.5	1471	7.5		0.440		14.2	LOS B	15.8	118.0				
West: Pakuranga Road (West)															
Lane 1	1212	6.5	1209	6.6	1345	0.899	100	17.8	LOS B	33.6 ^{N4}	248.1 ^{N4}	Full	152	0.0	50.0
Lane 2	688	6.5	687	6.6	764	0.899	100	35.8	LOS D	33.6 ^{N4}	248.1 ^{N4}	Full	152	-43.2 ^{N3}	50.0
Lane 3	561	6.5	560	6.6	623 ¹	0.899	100	40.5	LOS D	33.6 ^{N4}	248.1 ^{N4}	Full	152	-50.0 ^{N3}	50.0
Lane 4	54	13.0	54	13.0	119	0.451	100	80.8	LOS F	4.0	30.8	Short	25	0.0	NA
Approach	2515	6.7	2509 ^{N1}	6.7		0.899		29.1	LOS C	33.6	248.1				
Intersection	4222	7.0	4216 ^{N1}	7.0		0.921		27.4	LOS C	33.6	248.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

^{N4} Average back of queue has been restricted to the available queue storage space.

^{N7} The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)										
South: William Roberts Road										
Mov.	L2	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane No.	
From S To Exit:	W	E			veh/h	v/c	%	%		
Lane 1	141	95	236	7.2	256	0.921	100	NA	NA	
Approach	141	95	236	7.2		0.921				
East: Pakuranga Road (East)										
Mov.	L2	T1	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane No.	
From E To Exit:	S	W			veh/h	v/c	%	%		
Lane 1	73	417	490	7.3	1114	0.440	100	NA	NA	
Lane 2	-	488	488	7.6	1110	0.440	100	NA	NA	

Lane 3	-	493	493	7.6	1122	0.440	100	NA	NA
Approach	73	1398	1471	7.5		0.440			
West: Pakuranga Road (West)									
Mov. From W To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	E	S							
Lane 1	1209	-	1209	6.6	1345	0.899	100	NA	NA
Lane 2	687	-	687	6.6	764	0.899	100	NA	NA
Lane 3	560	-	560	6.6	623 ¹	0.899	100	NA	NA
Lane 4	-	54	54	13.0	119	0.451	100	24.0	3
Approach	2456	54	2509	6.7		0.899			
Total %HV Deg. Satn (v/c)									
Intersection	4216	7.0		0.921					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- ¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

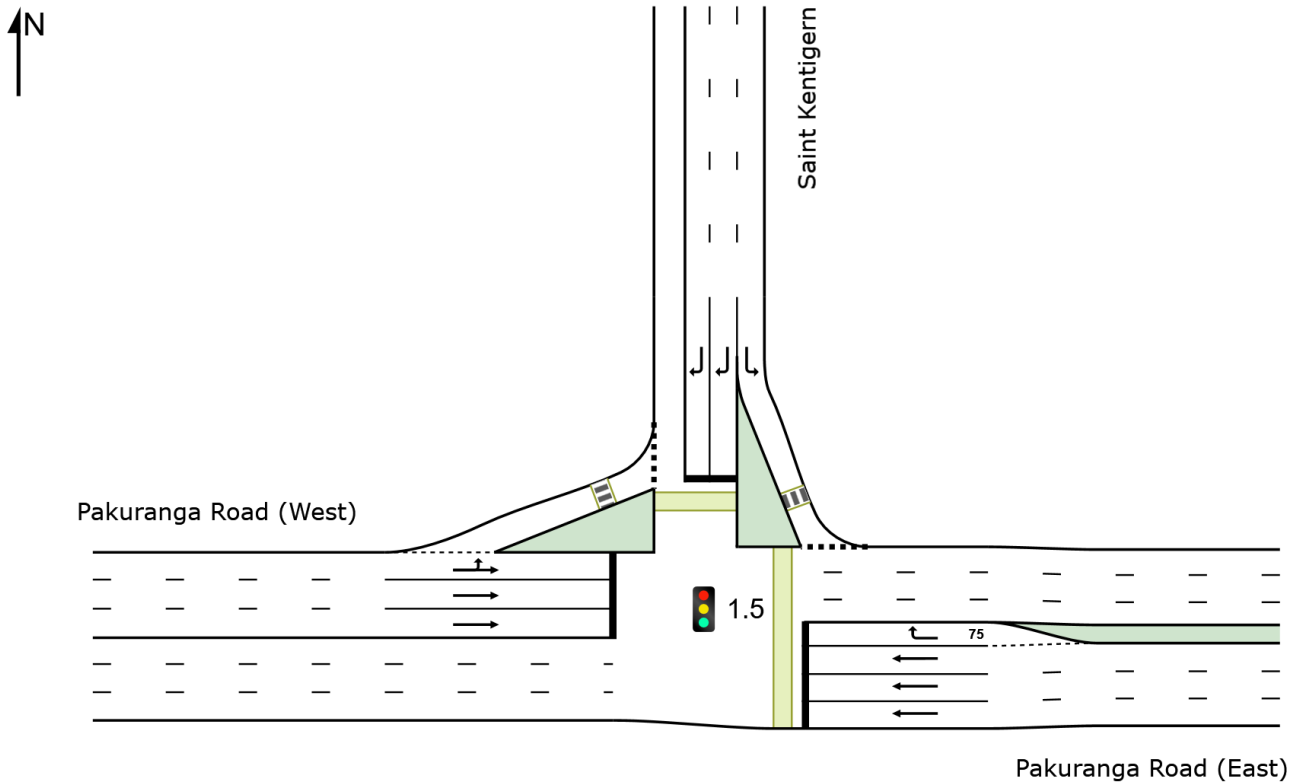
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate % veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
South Exit: William Roberts Road												
Merge Type: Not Applied												
Full Length Lane	1											
East Exit: Pakuranga Road (East)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											
West Exit: Pakuranga Road (West)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											

SITE LAYOUT

Site: 1.5 [1.5 Saint Kentigern/ Pakuranga Rd - PD (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.3\CS 1.3 PM.sip9

LANE SUMMARY

Site: 1.5 [1.5 Saint Kentigern/ Pakuranga Rd - PD (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]						[Veh	Dist]				
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			m		m	%	%
East: Pakuranga Road (East)															
Lane 1	458	7.6	458	7.6	1415	0.323	100	5.4	LOS A	9.8	73.3	Full	87	0.0	0.0
Lane 2	458	7.6	458	7.6	1415	0.323	100	5.4	LOS A	9.8	73.3	Full	87	0.0	0.0
Lane 3	460	7.6	460	7.6	1422	0.323	100	5.4	LOS A	9.9	73.6	Full	87	0.0	0.0
Lane 4	27	3.7	27	3.7	139	0.194	100	52.6	LOS D	1.5	10.8	Short	75	0.0	NA
Approach	1402	7.5	1402	7.5		0.323		6.3	LOS A	9.9	73.6				
North: Saint Kentigern															
Lane 1	57	3.5	57	3.5	544	0.105	100	15.0	LOS B	1.9	13.8	Full	96	0.0	0.0
Lane 2	47	7.5	47	7.5	254	0.184	100	60.9	LOS E	3.0	22.6	Full	96	0.0	0.0
Lane 3	46	7.5	46	7.5	250	0.184	100	61.0	LOS E	3.0	22.3	Full	96	0.0	0.0
Approach	150	6.0	150	6.0		0.184		43.5	LOS D	3.0	22.6				
West: Pakuranga Road (West)															
Lane 1	603	6.2	602	6.2	701	0.859	100	15.7	LOS B	21.8	160.7	Full	184	0.0	0.0
Lane 2	982	6.5	981	6.5	1142	0.859	100	10.5	LOS B	37.8	279.2	Full	184	0.0	43.2
Lane 3	982	6.5	981	6.5	1142	0.859	100	16.7	LOS B	40.6 ^{N4}	300.3 ^{N4}	Full	184	0.0	50.0
Approach	2568	6.4	2564 ^{N1}	6.4		0.859		14.1	LOS B	40.6	300.3				
Intersection	4120	6.8	4116 ^{N1}	6.8		0.859		12.4	LOS B	40.6	300.3				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)										
East: Pakuranga Road (East)										
Mov.	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From E To Exit:	W	N								
Lane 1	458	-	458	7.6	1415	0.323	100	NA	NA	
Lane 2	458	-	458	7.6	1415	0.323	100	NA	NA	
Lane 3	460	-	460	7.6	1422	0.323	100	NA	NA	
Lane 4	-	27	27	3.7	139	0.194	100	0.0	3	
Approach	1375	27	1402	7.5		0.323				
North: Saint Kentigern										
Mov.	L2	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From N To Exit:	E	W								
Lane 1	57	-	57	3.5	544	0.105	100	NA	NA	

Lane 2	-	47	47	7.5	254	0.184	100	NA	NA
Lane 3	-	46	46	7.5	250	0.184	100	NA	NA
Approach	57	93	150	6.0		0.184			
West: Pakuranga Road (West)									
Mov. From W To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	N	E							
Lane 1	54	548	602	6.2	701	0.859	100	NA	NA
Lane 2	-	981	981	6.5	1142	0.859	100	NA	NA
Lane 3	-	981	981	6.5	1142	0.859	100	NA	NA
Approach	54	2510	2564	6.4		0.859			
Total %HV Deg. Satn (v/c)									
Intersection	4116	6.8		0.859					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
East Exit: Pakuranga Road (East)												
Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
Full Length Lane	2		Merge Analysis not applied.									
Full Length Lane	3		Merge Analysis not applied.									
North Exit: Saint Kentigern												
Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
West Exit: Pakuranga Road (West)												
Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
Full Length Lane	2		Merge Analysis not applied.									
Full Length Lane	3		Merge Analysis not applied.									

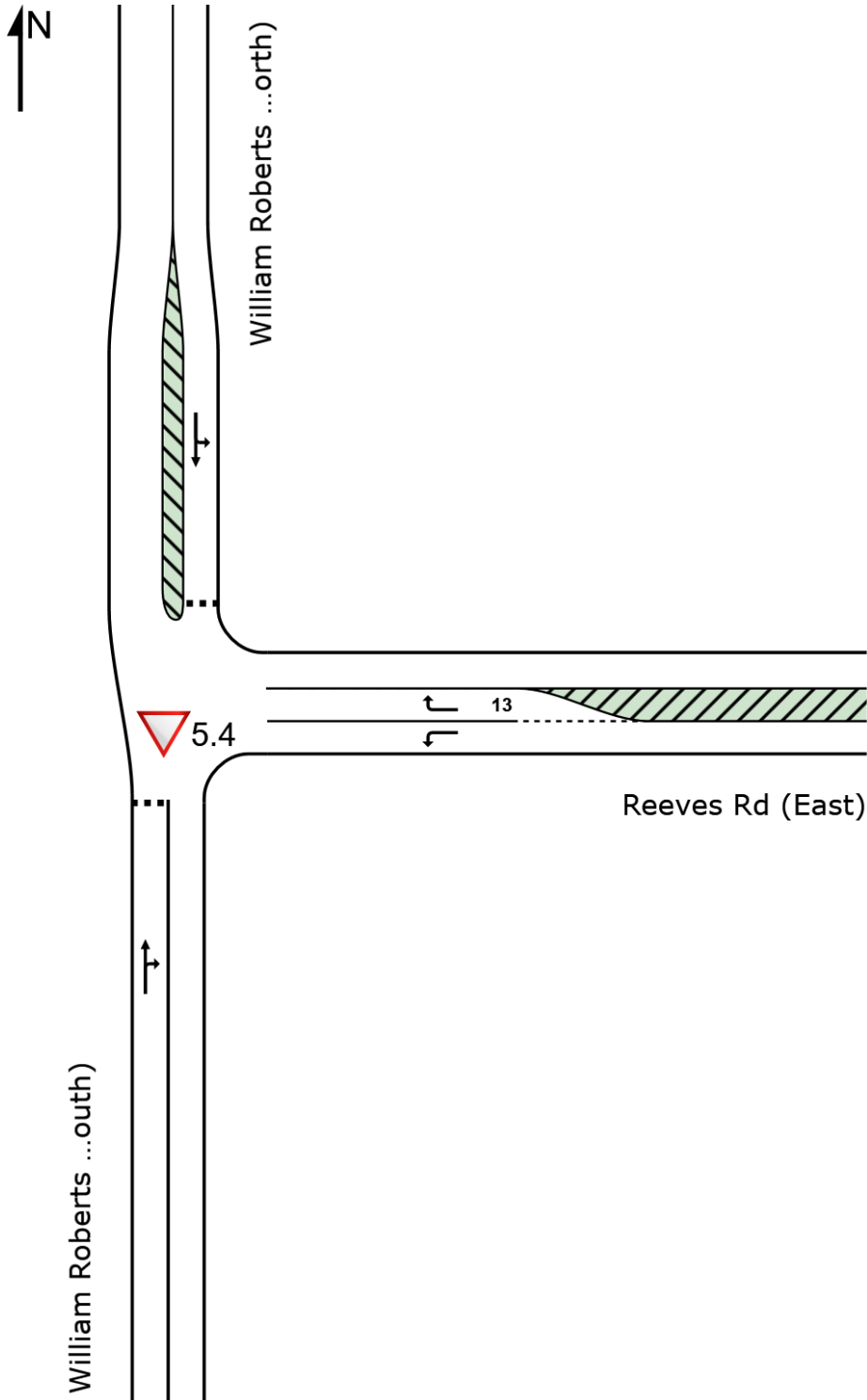
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SITE LAYOUT

▽ Site: 5.4 [5.4 Reeves Rd / William Roberts Rd - Import (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 5.4 [5.4 Reeves Rd / William Roberts Rd - Import (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS [Total HV]		ARRIVAL FLOWS [Total HV]		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh Dist]		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			m		m	%	%
South: William Roberts Rd (South)															
Lane 1	315	8.0	315	8.0	1139	0.276	100	2.2	LOS A	1.2	8.8	Full	243	0.0	0.0
Approach	315	8.0	315	8.0		0.276		2.2	LOS A	1.2	8.8				
East: Reeves Rd (East)															
Lane 1	57	8.8	57	8.8	1721	0.033	100	4.6	LOS A	0.0	0.0	Full	266	0.0	0.0
Lane 2	76	15.8	76	15.8	1643	0.046	100	4.7	LOS A	0.0	0.0	Short	13	0.0	NA
Approach	133	12.8	133	12.8		0.046		4.7	NA	0.0	0.0				
North: William Roberts Rd (North)															
Lane 1	80	5.0	80	5.0	1296	0.062	100	4.3	LOS A	0.2	1.5	Full	244	0.0	0.0
Approach	80	5.0	80	5.0		0.062		4.3	LOS A	0.2	1.5				
Intersection	528	8.7	528	8.8		0.276		3.2	NA	1.2	8.8				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Approach Lane Flows (veh/h)										
South: William Roberts Rd (South)										
Mov. From S To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	N	E								
Lane 1	161	154	315	8.0	1139	0.276	100	NA	NA	
Approach	161	154	315	8.0		0.276				
East: Reeves Rd (East)										
Mov. From E To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	S	N								
Lane 1	57	-	57	8.8	1721	0.033	100	NA	NA	
Lane 2	-	76	76	15.8	1643	0.046	100	0.0	1	
Approach	57	76	133	12.8		0.046				
North: William Roberts Rd (North)										
Mov. From N To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	E	S								
Lane 1	12	68	80	5.0	1296	0.062	100	NA	NA	
Approach	12	68	80	5.0		0.062				

	Total	%HV	Deg.Satn (v/c)
Intersection	528	8.8	0.276

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: William Roberts Rd (South)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
East Exit: Reeves Rd (East)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
North Exit: William Roberts Rd (North)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.

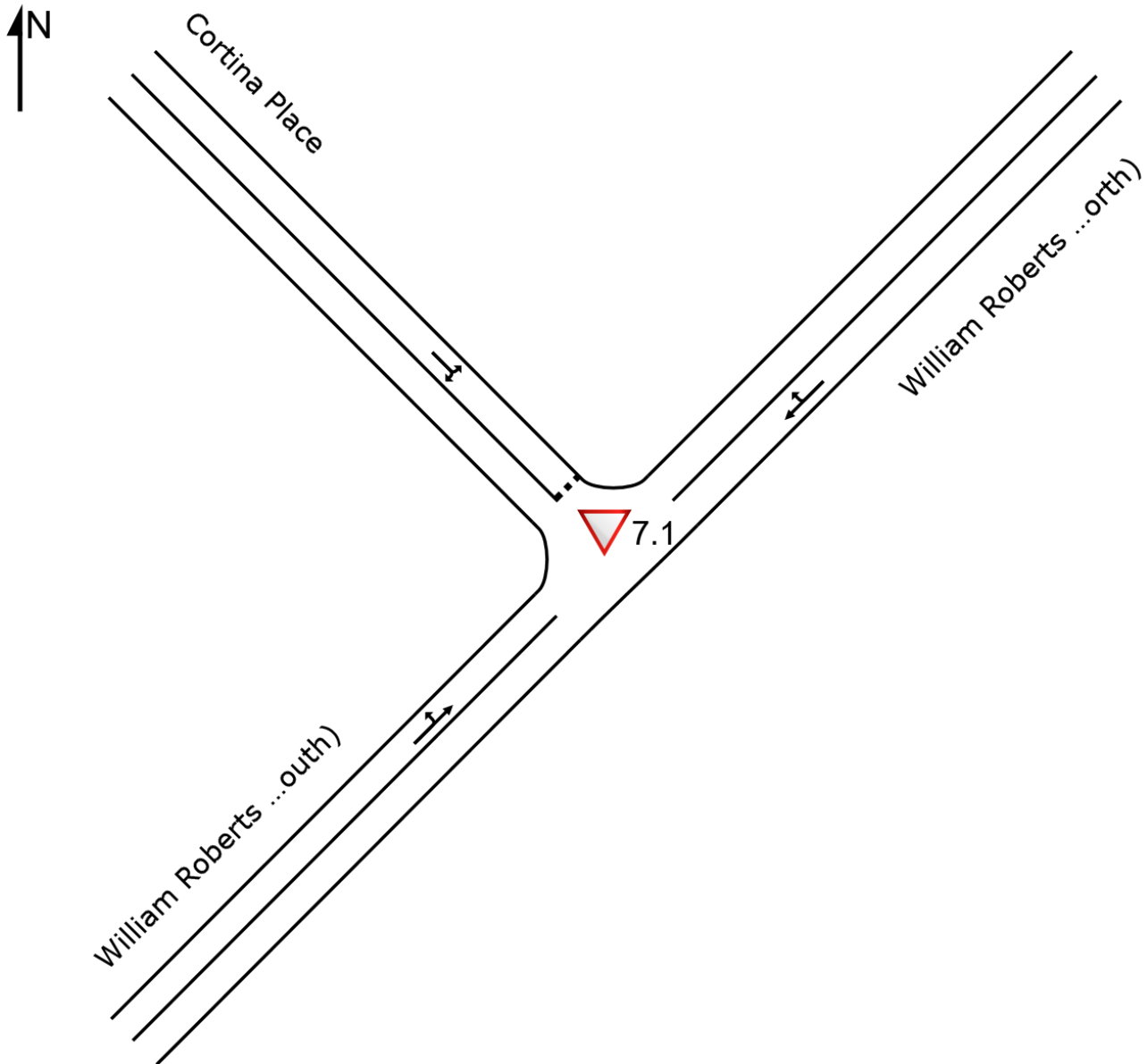
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SITE LAYOUT

▽ Site: 7.1 [7.1 William Roberts Rd / Cortina PI - Import (Site Folder: General)]

Scheme Design
Site Category: (None)
Give-Way (Two-Way)

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LANE SUMMARY

Site: 7.1 [7.1 William Roberts Rd / Cortina PI - Import (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

Scheme Design
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS [Total HV] veh/h %		ARRIVAL FLOWS [Total HV] veh/h %		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %	
NorthEast: William Roberts Road (North)															
Lane 1	116	5.2	116	5.2	1702	0.068	100	1.0	LOS A	0.2	1.4	Full	243	0.0	0.0
Approach	116	5.2	116	5.2		0.068		1.0	NA	0.2	1.4				
NorthWest: Cortina Place															
Lane 1	64	6.3	64	6.3	1111	0.058	100	3.2	LOS A	0.2	1.6	Full	177	0.0	0.0
Approach	64	6.3	64	6.3		0.058		3.2	LOS A	0.2	1.6				
SouthWest: William Roberts Road (South)															
Lane 1	276	8.4	276	8.3	1792	0.154	100	0.2	LOS A	0.0	0.0	Full	110	0.0	0.0
Approach	276	8.4	276	8.3		0.154		0.2	NA	0.0	0.0				
Intersection	456	7.3	456	7.3		0.154		0.8	NA	0.2	1.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab). Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Approach Lane Flows (veh/h)										
NorthEast: William Roberts Road (North)										
Mov.	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Prob. Ov.	Ov. Lane No.
From NE To Exit:	SW	NW			veh/h	v/c	%	%		
Lane 1	91	25	116	5.2	1702	0.068	100	NA	NA	
Approach	91	25	116	5.2		0.068				
NorthWest: Cortina Place										
Mov.	L2	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Prob. Ov.	Ov. Lane No.
From NW To Exit:	NE	SW			veh/h	v/c	%	%		
Lane 1	45	19	64	6.3	1111	0.058	100	NA	NA	
Approach	45	19	64	6.3		0.058				
SouthWest: William Roberts Road (South)										
Mov.	L2	T1	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Prob. Ov.	Ov. Lane No.
From SW To Exit:	NW	NE			veh/h	v/c	%	%		
Lane 1	29	247	276	8.3	1792	0.154	100	NA	NA	
Approach	29	247	276	8.3		0.154				
Total %HV Deg. Satn (v/c)										

Intersection	456	7.3	0.154
--------------	-----	-----	-------

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
NorthEast Exit: William Roberts Road (North) Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
NorthWest Exit: Cortina Place Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
SouthWest Exit: William Roberts Road (South) Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.

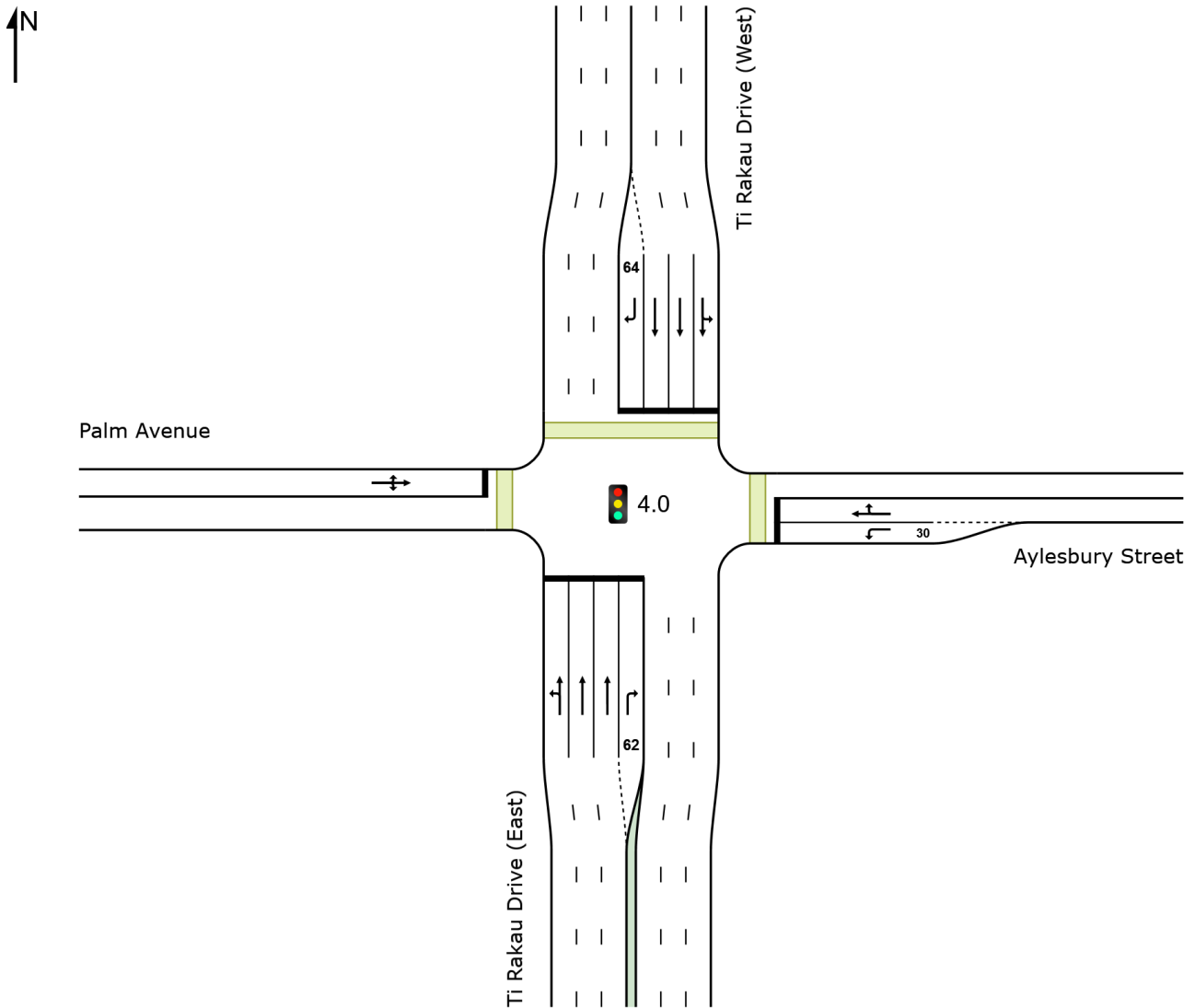
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SITE LAYOUT

Site: 4.0 [4.0 Palm Ave / Aylesbury St - Import (Site Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

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LANE SUMMARY

Site: 4.0 [4.0 Palm Ave / Aylesbury St - Import (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total HV]	%	[Total HV]	%						[Veh]	[Dist]				
South: Ti Rakau Drive (East)															
Lane 1	596	4.9	584	4.9	1207	0.483	100	16.1	LOS B	19.5	142.0	Full	110	0.0	28.2
Lane 2	619	5.1	606	5.1	1254	0.483	100	14.0	LOS B	19.5	142.3	Full	110	0.0	28.5
Lane 3	611	5.1	598	5.1	1237 ¹	0.483	100	13.9	LOS B	19.1	139.4	Full	110	0.0	26.5
Lane 4	10	0.0	10	0.0	70	0.139	100	82.9	LOS F	0.7	5.1	Short	62	0.0	NA
Approach	1836	5.0	1798 ^{N1}	5.0		0.483		15.0	LOS B	19.5	142.3				
East: Aylesbury Street															
Lane 1	27	3.7	27	3.7	67	0.404	100	61.3	LOS E	1.8	13.3	Short	30	-50.0 ^{N3}	NA
Lane 2	20	0.0	20	0.0	72	0.278	100	81.3	LOS F	1.5	10.6	Full	40	0.0	0.0
Approach	47	2.1	47	2.1		0.404		69.8	LOS E	1.8	13.3				
North: Ti Rakau Drive (West)															
Lane 1	414	7.5	402	7.7	624	0.644	100	15.9	LOS B	15.5	115.9	Full	174	-49.4 ^{N3}	0.0
Lane 2	409	7.7	397	7.8	616	0.644	100	16.4	LOS B	15.6	116.3	Full	174	-50.0 ^{N3}	0.0
Lane 3	402	7.7	390	7.8	606	0.644	100	16.2	LOS B	15.1	112.7	Full	174	-50.0 ^{N3}	0.0
Lane 4	43	7.0	42	7.1	67	0.622	100	86.9	LOS F	3.3	24.3	Short	64	0.0	NA
Approach	1268	7.6	1231 ^{N1}	7.8		0.644		18.5	LOS B	15.6	116.3				
West: Palm Avenue															
Lane 1	95	4.2	95	4.2	112	0.852	100	89.2	LOS F	7.8	56.8	Full	87	-30.1 ^{N3}	0.0
Approach	95	4.2	95	4.2		0.852		89.2	LOS F	7.8	56.8				
Intersection	3246	6.0	3170 ^{N1}	6.1		0.852		19.4	LOS B	19.5	142.3				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

Approach Lane Flows (veh/h)										
South: Ti Rakau Drive (East)										
Mov. From S To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	W	N	E							
Lane 1	63	521	-	584	4.9	1207	0.483	100	NA	NA
Lane 2	-	606	-	606	5.1	1254	0.483	100	NA	NA
Lane 3	-	598	-	598	5.1	1237 ¹	0.483	100	NA	NA
Lane 4	-	-	10	10	0.0	70	0.139	100	0.0	3

Approach	63	1725	10	1798	5.0		0.483				
East: Aylesbury Street											
Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	
From E						Cap.	Satn	Util.	SL	Ov.	Lane
To Exit:	S	W	N			veh/h	v/c	%	%	%	No.
Lane 1	27	-	-	27	3.7	67	0.404	100	0.0	2	
Lane 2	-	10	10	20	0.0	72	0.278	100	NA	NA	
Approach	27	10	10	47	2.1		0.404				
North: Ti Rakau Drive (West)											
Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	
From N						Cap.	Satn	Util.	SL	Ov.	Lane
To Exit:	E	S	W			veh/h	v/c	%	%	%	No.
Lane 1	10	392	-	402	7.7	624	0.644	100	NA	NA	
Lane 2	-	397	-	397	7.8	616	0.644	100	NA	NA	
Lane 3	-	390	-	390	7.8	606	0.644	100	NA	NA	
Lane 4	-	-	42	42	7.1	67	0.622	100	0.0	3	
Approach	10	1179	42	1231	7.8		0.644				
West: Palm Avenue											
Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	
From W						Cap.	Satn	Util.	SL	Ov.	Lane
To Exit:	N	E	S			veh/h	v/c	%	%	%	No.
Lane 1	44	10	41	95	4.2	112	0.852	100	NA	NA	
Approach	44	10	41	95	4.2		0.852				
Total %HV Deg. Satn (v/c)											
Intersection	3170	6.1					0.852				

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- 1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

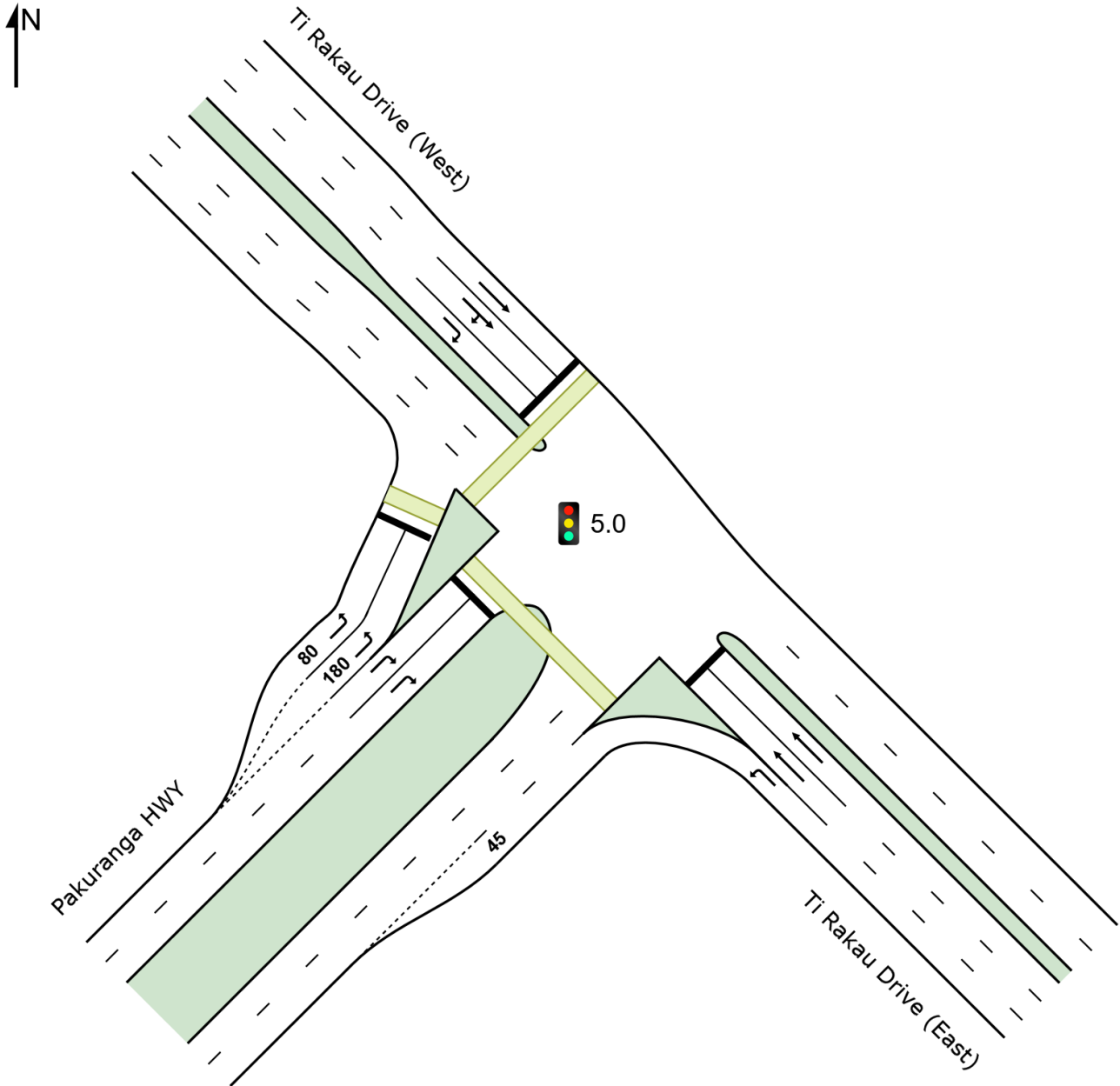
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
South Exit: Ti Rakau Drive (East)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											
East Exit: Aylesbury Street												
Merge Type: Not Applied												
Full Length Lane	1											
North Exit: Ti Rakau Drive (West)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											
West Exit: Palm Avenue												
Merge Type: Not Applied												
Full Length Lane	1											

SITE LAYOUT

Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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LANE SUMMARY

Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]						[Veh	Dist]				
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			m	m	%	%	
SouthEast: Ti Rakau Drive (East)															
Lane 1	840	7.7	795	7.5	1727	0.461	100	6.4	LOS A	0.0	0.0	Full	91	0.0	0.0
Lane 2	382	5.7	363	5.6	392	0.925	100	80.4	LOS F	20.2 ^{N4}	148.5 ^{N4}	Full	91	-28.2 ^{N3}	50.0
Lane 3	379	5.7	360	5.6	389	0.925	100	80.6	LOS F	20.2 ^{N4}	148.5 ^{N4}	Full	91	-28.5 ^{N3}	50.0
Approach	1601	6.7	1518 ^{N1}	6.6		0.925		41.7	LOS D	20.2	148.5				
NorthWest: Ti Rakau Drive (West)															
Lane 1	442	9.0	429	9.1	534	0.804	100	55.3	LOS E	23.8 ^{N4}	179.5 ^{N4}	Full	110	0.0	50.0
Lane 2	433	6.9	421	7.0	524	0.804	100	59.6	LOS E	24.2 ^{N4}	179.5 ^{N4}	Full	110	0.0	50.0
Lane 3	420	6.7	409	6.8	509	0.804	100	60.3	LOS E	24.2 ^{N4}	179.5 ^{N4}	Full	110	0.0	50.0
Approach	1295	7.6	1259 ^{N1}	7.7		0.804		58.3	LOS E	24.2	179.5				
SouthWest: Pakuranga HWY															
Lane 1	534	4.7	534	4.7	557 ¹	0.959	100	75.4	LOS E	41.0	298.9	Short	80	-28.2 ^{N3}	NA
Lane 2	534	4.7	534	4.7	556 ¹	0.959	100	75.5	LOS E	41.0	298.6	Short	180	-28.5 ^{N3}	NA
Lane 3	492	5.7	492	5.7	521	0.944	100	88.7	LOS F	43.6	320.3	Full	1650	0.0	0.0
Lane 4	497	5.7	497	5.7	526	0.944	100	88.5	LOS F	44.0	323.2	Full	1650	0.0	0.0
Approach	2057	5.2	2057	5.2		0.959		81.8	LOS F	44.0	323.2				
Intersection	4953	6.3	4834 ^{N1}	6.5		0.959		63.1	LOS E	44.0	323.2				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)										
SouthEast: Ti Rakau Drive (East)										
Mov. From SE To Exit:	L2	T1	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov. Lane No.	Ov. Lane No.
	SW	NW								
Lane 1	795	-	795	7.5	1727	0.461	100	NA	NA	NA
Lane 2	-	363	363	5.6	392	0.925	100	NA	NA	NA
Lane 3	-	360	360	5.6	389	0.925	100	NA	NA	NA
Approach	795	722	1518	6.6		0.925				
NorthWest: Ti Rakau Drive (West)										
Mov. From NW	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	Ov. Lane

To Exit:	SE	SW			veh/h	v/c	%	%	No.
Lane 1	429	-	429	9.1	534	0.804	100	NA	NA
Lane 2	38	383	421	7.0	524	0.804	100	NA	NA
Lane 3	-	409	409	6.8	509	0.804	100	NA	NA
Approach	467	792	1259	7.7		0.804			
SouthWest: Pakuranga HWY									
Mov.	L2	R2	Total	%HV		Deg.	Lane	Prob.	Ov.
From SW					Cap.	Satn	Util.	SL Ov.	Lane
To Exit:	NW	SE			veh/h	v/c	%	%	No.
Lane 1	534	-	534	4.7	557 ¹	0.959	100	100.0	2
Lane 2	534	-	534	4.7	556 ¹	0.959	100	51.6	4
Lane 3	-	492	492	5.7	521	0.944	100	NA	NA
Lane 4	-	497	497	5.7	526	0.944	100	NA	NA
Approach	1068	989	2057	5.2		0.959			
Total %HV Deg. Satn (v/c)									
Intersection	4834	6.5		0.959					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- ¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

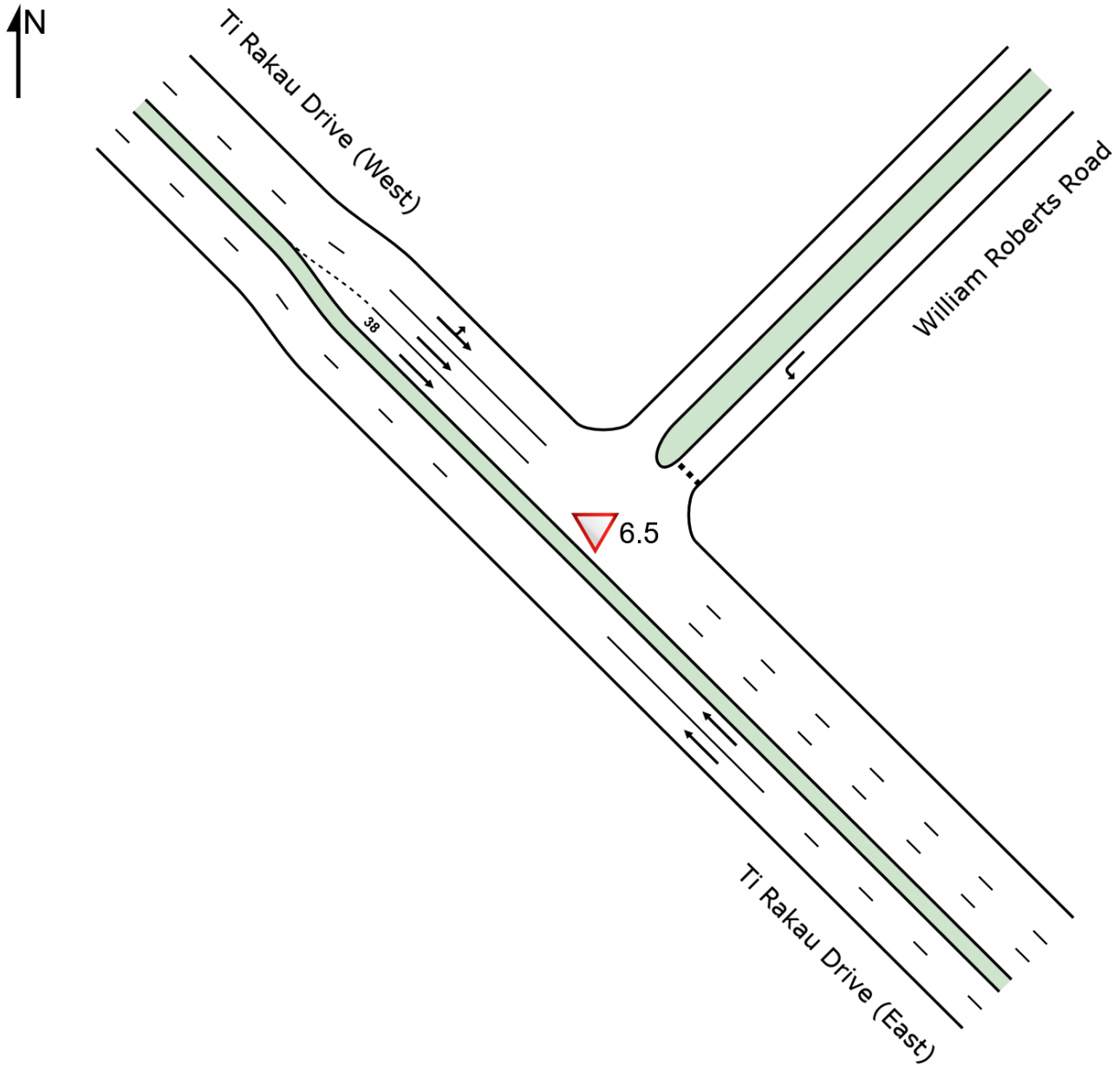
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
SouthEast Exit: Ti Rakau Drive (East)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
NorthWest Exit: Ti Rakau Drive (West)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											
SouthWest Exit: Pakuranga HWY												
Merge Type: Priority												
Exit Short Lane	1	45	0.0	383	3.00	2.00	795	1395	0.570	0.6	2.0	
Merge Lane	2	-	100.0				383	1800	0.213	0.0	0.0	

SITE LAYOUT

▽ Site: 6.5 [6.5 William Roberts Rd / Ti Rakau Dr - Import (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

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Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.3\CS 1.3 PM.sip9

LANE SUMMARY

Site: 6.5 [6.5 William Roberts Rd / Ti Rakau Dr - Import (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	[HV %	[Total veh/h	[HV %						[Veh	[Dist] m				
SouthEast: Ti Rakau Drive (East)															
Lane 1	835	6.4	789	6.2	1826	0.432	100	0.0	LOS A	0.0	0.0	Full	18	0.0	0.0
Lane 2	826	6.4	781	6.2	1806	0.432	100	0.0	LOS A	0.0	0.0	Full	18	0.0	0.0
Approach	1661	6.4	1570 ^{N1}	6.2		0.432		0.0	NA	0.0	0.0				
NorthEast: William Roberts Road															
Lane 1	110	3.6	110	3.6	485	0.227	100	3.4	LOS A	0.4	3.0	Full	110	-50.0 ^{N7}	0.0
Approach	110	3.6	110	3.6		0.227		3.4	LOS A	0.4	3.0				
NorthWest: Ti Rakau Drive (West)															
Lane 1	566	7.3	565	7.3	1869	0.302	100	2.3	LOS A	0.0	0.0	Full	97	0.0	0.0
Lane 2	547	6.2	546	6.2	1806	0.302	100	0.0	LOS A	5.1 ^{N5}	37.6 ^{N5}	Full	97	0.0	0.0
Lane 3	349	6.2	348	6.2	1152	0.302	100	0.0	LOS A	0.0	0.0	Short	38	-36.2 ^{N3}	NA
Approach	1461	6.7	1460 ^{N1}	6.6		0.302		0.9	NA	5.1	37.6				
Intersection	3232	6.4	3139 ^{N1}	6.6		0.432		0.5	NA	5.1	37.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

N3 Capacity Adjustment due to downstream lane blockage determined by the program.

N5 Continuous Lane results determined by Back of Queue values of downstream lanes (proportional to lane movement flows).

N7 The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)									
SouthEast: Ti Rakau Drive (East)									
Mov. From SE To Exit:	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	NW								
Lane 1	789	789	6.2	1826	0.432	100	NA	NA	
Lane 2	781	781	6.2	1806	0.432	100	NA	NA	
Approach	1570	1570	6.2		0.432				
NorthEast: William Roberts Road									
Mov. From NE To Exit:	L2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SE								
Lane 1	110	110	3.6	485	0.227	100	NA	NA	

Approach	110	110	3.6			0.227				
NorthWest: Ti Rakau Drive (West)										
Mov. From NW To Exit:	L2 NE	T1 SE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.	
Lane 1	276	289	565	7.3	1869	0.302	100	NA	NA	
Lane 2	-	546	546	6.2	1806	0.302	100	NA	NA	
Lane 3	-	348	348	6.2	1152	0.302	100	0.0	2	
Approach	276	1184	1460	6.6		0.302				
Total %HV Deg. Satn (v/c)										
Intersection	3139	6.6		0.432						

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.
Full Length Lane	3											Merge Analysis not applied.
NorthEast Exit: William Roberts Road												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
NorthWest Exit: Ti Rakau Drive (West)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.

SITE LAYOUT

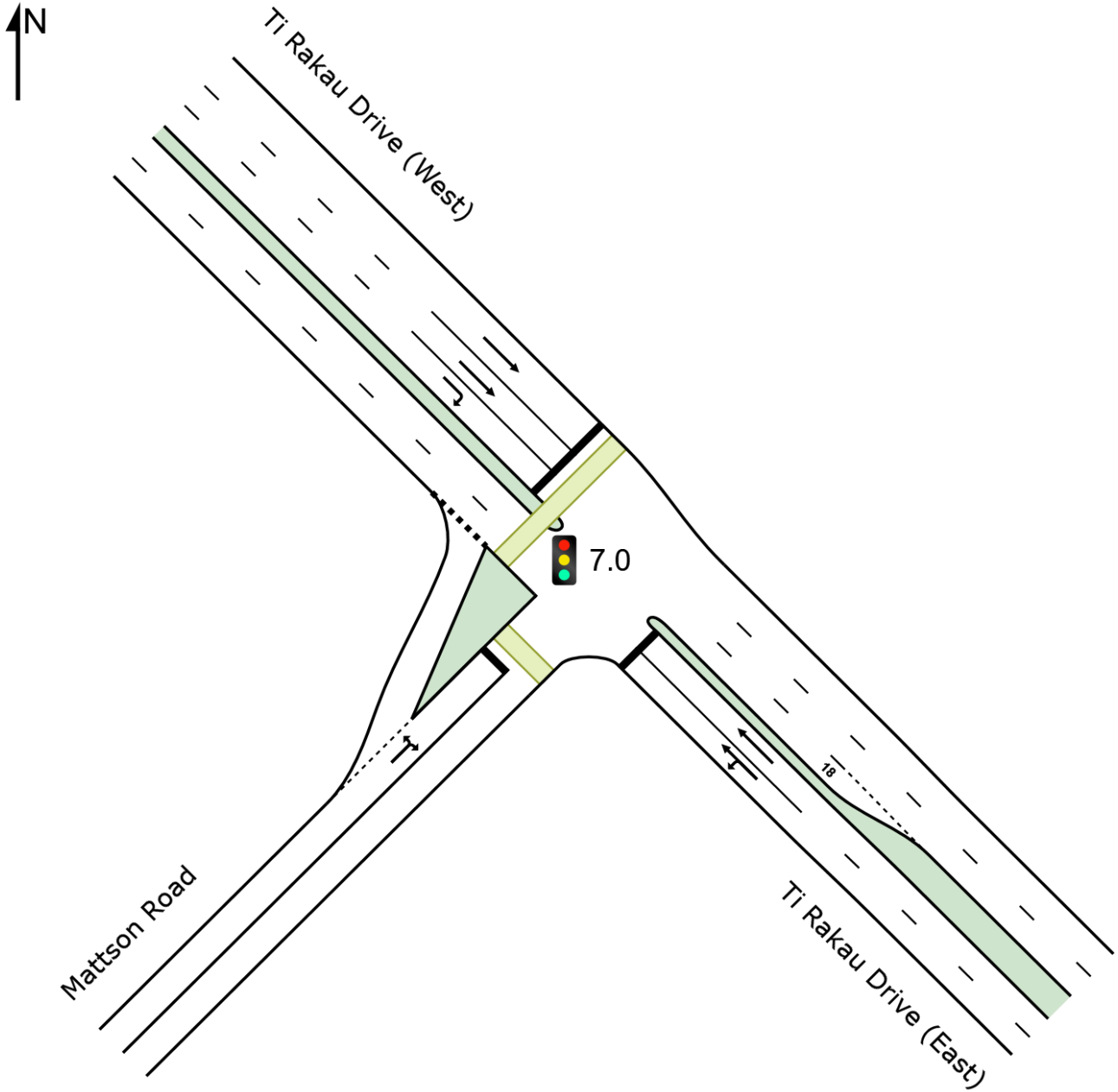
 Site: 7.0 [7.0 Mattson Rd/ Ti Rakau Dr (Site Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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Project: C:\Users\jacques.vandenneever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.3\CS 1.3 PM.sip9

LANE SUMMARY

Site: 7.0 [7.0 Mattson Rd/ Ti Rakau Dr (Site Folder: General)]

Network: N101 [AM
(Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 68 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV %	[Total veh/h	HV %						[Veh	Dist] m				
SouthEast: Ti Rakau Drive (East)															
Lane 1	837	6.6	790	6.4	895	0.883	100	27.9	LOS C	30.5	225.4	Full	187	0.0	21.9
Lane 2	845	6.5	797	6.3	903	0.883	100	27.8	LOS C	30.7	226.5	Full	187	0.0	22.4
Approach	1682	6.5	1588 ^N ₁	6.3		0.883		27.8	LOS C	30.7	226.5				
NorthWest: Ti Rakau Drive (West)															
Lane 1	618	6.0	617	6.0	1316	0.469	100	5.6	LOS A	4.0 ^{N4}	29.4 ^{N4}	Full	18	0.0	50.0
Lane 2	580	6.0	580	6.0	1237	0.469	100	5.6	LOS A	4.0 ^{N4}	29.4 ^{N4}	Full	18	0.0	50.0
Lane 3	97	6.2	97	6.2	154	0.630	100	38.1	LOS D	3.4	25.3	Full	18	0.0	36.2
Approach	1295	6.0	1294 ^N ₁	6.0		0.630		8.0	LOS A	4.0	29.4				
SouthWest: Mattson Road															
Lane 1	71	1.4	71	1.4	405	0.175	100	24.1	LOS C	1.9	13.7	Full	282	0.0	0.0
Approach	71	1.4	71	1.4		0.175		24.1	LOS C	1.9	13.7				
Intersection	3048	6.2	2953 ^N ₁	6.4		0.883		19.1	LOS B	30.7	226.5				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)										
SouthEast: Ti Rakau Drive (East)										
Mov. From SE To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SW	NW								
Lane 1	41	749	790	6.4	895	0.883	100	NA	NA	
Lane 2	-	797	797	6.3	903	0.883	100	NA	NA	
Approach	41	1546	1588	6.3		0.883				
NorthWest: Ti Rakau Drive (West)										
Mov. From NW To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SE	SW								
Lane 1	617	-	617	6.0	1316	0.469	100	NA	NA	
Lane 2	580	-	580	6.0	1237	0.469	100	NA	NA	
Lane 3	-	97	97	6.2	154	0.630	100	NA	NA	
Approach	1197	97	1294	6.0		0.630				
SouthWest: Mattson Road										
Mov.	L2	R2	Total	%HV	Deg.	Lane	Prob.	Ov.		

From SW To Exit:	NW	SE			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	23	48	71	1.4	405	0.175	100	NA	NA
Approach	23	48	71	1.4		0.175			
	Total	%HV	Deg.	Satn (v/c)					
Intersection	2953	6.4		0.883					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East)												
Merge Type: Priority												
Exit Short Lane	3	18	0.0	580	597	3.00	2.00	48	1184	0.041	1.1	1.3
Merge Lane	2	-	100.0	Merge Lane is not Opposed				580	1800	0.322	0.0	0.0
NorthWest Exit: Ti Rakau Drive (West)												
Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
SouthWest Exit: Mattson Road												
Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										

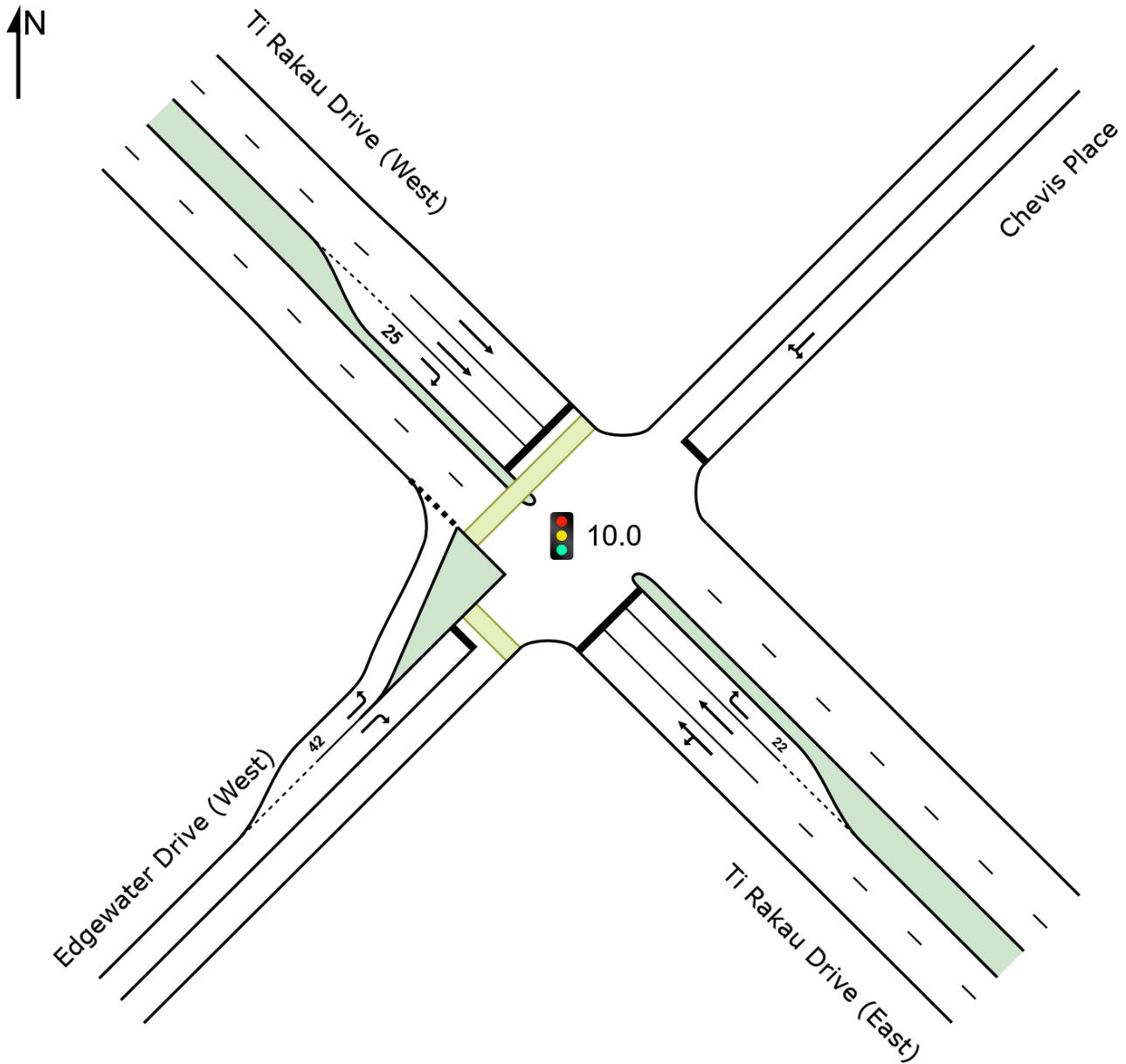
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 Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport
 Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.3\CS 1.3 PM.sip9

SITE LAYOUT

Site: 10.0 [10.0 Edgewater Dr (West) / Chevis Pl (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandenneever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.3\CS 1.3 PM.sip9

LANE SUMMARY

Site: 10.0 [10.0 Edgewater Dr (West) / Chevis Pl (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 105 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV %	[Total veh/h	HV %						[Veh	Dist] m				
SouthEast: Ti Rakau Drive (East)															
Lane 1	868	6.5	853	6.5	962	0.886	100	34.3	LOS C	35.8 ^{N4}	264.4 ^{N4}	Full	162	0.0	50.0
Lane 2	853	6.4	838	6.4	946 ¹	0.886	100	34.1	LOS C	35.8 ^{N4}	264.4 ^{N4}	Full	162	0.0	50.0
Lane 3	11	9.1	11	9.0	96	0.113	100	58.4	LOS E	0.6	4.2	Short	22	0.0	NA
Approach	1732	6.5	1701 ^{N1}	6.4		0.886		34.4	LOS C	35.8	264.4				
NorthEast: Chevis Place															
Lane 1	20	0.0	20	0.0	106	0.188	100	58.6	LOS E	1.0	7.3	Full	138	0.0	0.0
Approach	20	0.0	20	0.0		0.188		58.6	LOS E	1.0	7.3				
NorthWest: Ti Rakau Drive (West)															
Lane 1	526	2.5	512	2.6	1012	0.506	100	17.8	LOS B	15.5 ^{N4}	111.0 ^{N4}	Full	68	0.0	50.0
Lane 2	432	2.5	420	2.6	830 ¹	0.506	100	17.0	LOS B	13.4	95.5	Full	68	0.0	36.0
Lane 3	73	5.5	71	5.6	102	0.700	100	62.6	LOS E	3.9	28.9	Short	25	0.0	NA
Approach	1031	2.7	1003 ^{N1}	2.8		0.700		20.7	LOS C	15.5	111.0				
SouthWest: Edgewater Drive (West)															
Lane 1	87	5.7	87	5.7	650	0.134	100	17.2	LOS B	2.2	16.1	Short	42	0.0	NA
Lane 2	35	8.6	35	8.6	249	0.141	100	47.9	LOS D	1.6	12.1	Full	789	0.0	0.0
Approach	122	6.6	122	6.6		0.141		26.0	LOS C	2.2	16.1				
Intersection	2905	5.1	2846 ^{N1}	5.2		0.886		29.4	LOS C	35.8	264.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)											
SouthEast: Ti Rakau Drive (East)											
Mov. From SE To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.	Ov. Lane No.
	SW	NW	NE								
Lane 1	112	741	-	853	6.5	962	0.886	100	NA	NA	
Lane 2	-	838	-	838	6.4	946 ¹	0.886	100	NA	NA	
Lane 3	-	-	11	11	9.0	96	0.113	100	0.0	2	
Approach	112	1579	11	1701	6.4		0.886				
NorthEast: Chevis Place											
Mov.	L2	R2	Total	%HV		Deg.	Lane	Prob.	Ov.		
						v/c	Util.	SL	SL	Ov.	Ov.

From NE To Exit:	SE	NW			Cap. veh/h	Satn v/c	Util. %	SL %	Ov. %	Lane No.
Lane 1	10	10	20	0.0	106	0.188	100	NA	NA	
Approach	10	10	20	0.0		0.188				
NorthWest: Ti Rakau Drive (West)										
Mov. From NW To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. %	Ov. Lane No.
Lane 1	512	-	512	2.6	1012	0.506	100	NA	NA	
Lane 2	420	-	420	2.6	830 ¹	0.506	100	NA	NA	
Lane 3	-	71	71	5.6	102	0.700	100	18.3		2
Approach	931	71	1003	2.8		0.700				
SouthWest: Edgewater Drive (West)										
Mov. From SW To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. %	Ov. Lane No.
Lane 1	87	-	87	5.7	650	0.134	100	0.0		2
Lane 2	-	35	35	8.6	249	0.141	100	NA	NA	
Approach	87	35	122	6.6		0.141				
Total %HV Deg.Satn (v/c)										
Intersection	2846	5.2		0.886						

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- ¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

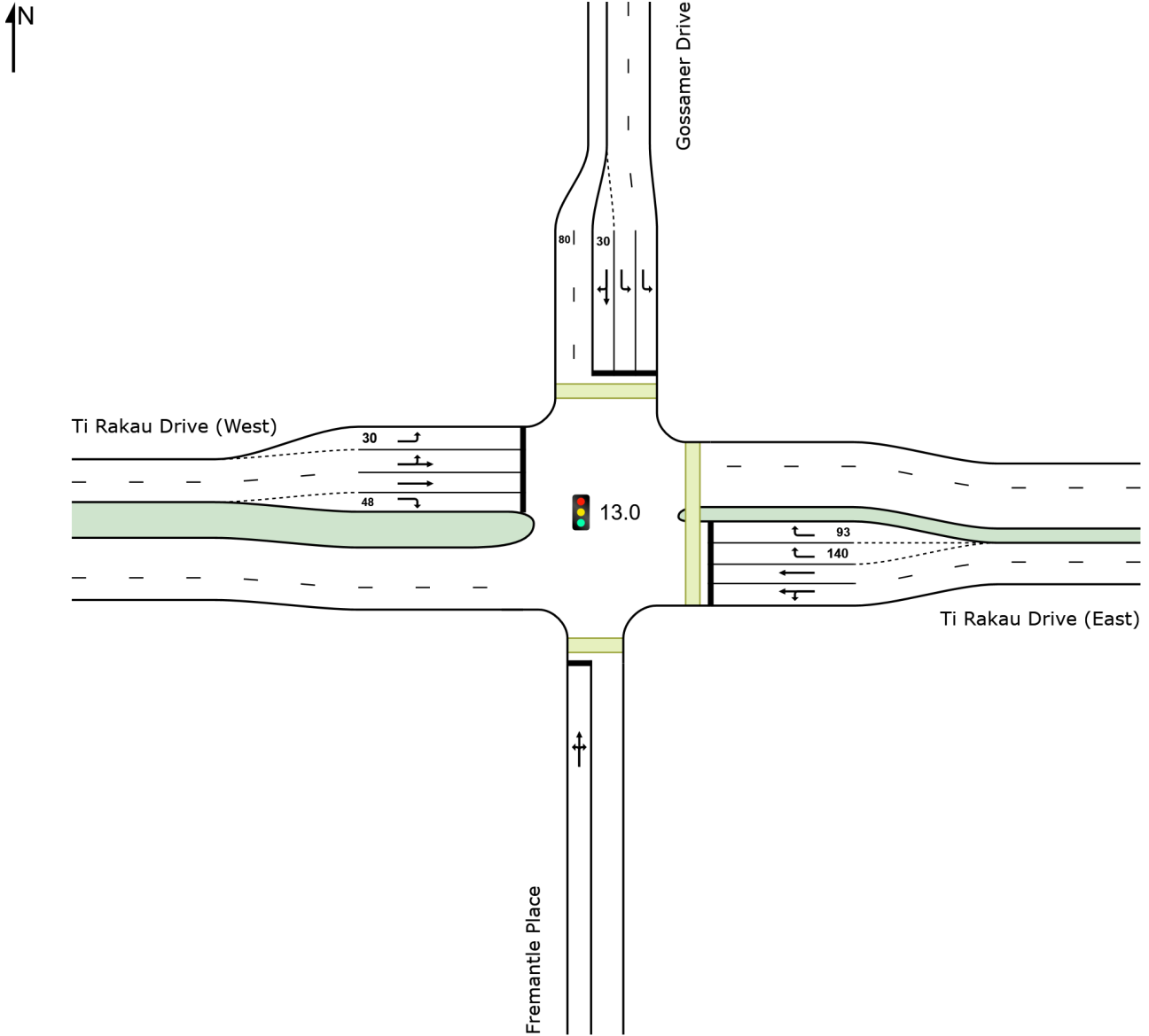
Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East) Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								
Full Length Lane	2		Merge Analysis not applied.								
NorthEast Exit: Chevis Place Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								
NorthWest Exit: Ti Rakau Drive (West) Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								
Full Length Lane	2		Merge Analysis not applied.								
SouthWest Exit: Edgewater Drive (West) Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								

SITE LAYOUT

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: General)]

Scheme Design
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

Scheme Design

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
	veh/h	%	veh/h	%	veh/h	v/c	%	sec		Dist]	m		m	%	%
South: Fremantle Place															
Lane 1	40	5.0	40	5.0	97	0.413	100	81.6	LOS F	3.0	21.8	Full	285	0.0	0.0
Approach	40	5.0	40	5.0		0.413		81.6	LOS F	3.0	21.8				
East: Ti Rakau Drive (East)															
Lane 1	906	6.5	906	6.5	901	1.005	100	77.9	LOS E	80.1	591.9	Full	636	0.0	0.0
Lane 2	775	6.6	775	6.6	771 ¹	1.005	100	98.9	LOS F	82.1	606.8	Full	636	0.0	0.8
Lane 3	258	8.6	258	8.6	505	0.511	47 ⁶	29.7	LOS C	9.3	70.2	Short	140	0.0	NA
Lane 4	548	8.6	548	8.6	505	1.084	100	141.5	LOS F	50.3	378.1	Short	93	0.0	NA
Approach	2487	7.2	2487	7.2		1.084		93.5	LOS F	82.1	606.8				
North: Gossamer Drive															
Lane 1	259	17.8	259	17.8	757	0.342	100	22.2	LOS C	9.2	73.9	Full	1010	0.0	0.0
Lane 2	246	17.8	246	17.8	719 ¹	0.342	100	22.0	LOS C	8.6	69.5	Full	1010	0.0	0.0
Lane 3	61	4.9	61	4.9	238	0.256	100	67.3	LOS E	4.1	29.6	Short	30	0.0	NA
Approach	566	16.4	566	16.4		0.342		26.9	LOS C	9.2	73.9				
West: Ti Rakau Drive (West)															
Lane 1	170	0.6	163	0.5	822	0.198	28 ⁵	19.3	LOS B	4.6	32.1	Short	30	0.0	NA
Lane 2	347	2.8	333	2.8	467 ¹	0.712	100	43.9	LOS D	19.7	140.9	Full	479	0.0	0.0
Lane 3	442	2.8	423	2.8	594 ¹	0.712	100	47.0	LOS D	26.7	191.6	Full	479	0.0	0.0
Lane 4	17	0.0	16	0.0	312	0.052	100	59.9	LOS E	1.0	6.9	Short	48	0.0	NA
Approach	976	2.4	934 ^{N1}	2.3		0.712		41.3	LOS D	26.7	191.6				
Intersection	4069	7.3	4027 ^{N1}	7.4		1.084		71.9	LOS E	82.1	606.8				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

⁵ Lane under-utilisation found by the program

⁶ Lane under-utilisation due to downstream effects

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)											
South: Fremantle Place											
Mov. From S To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Ov. %	Ov. Lane No.
Lane 1	13	10	17	40	5.0	97	0.413	100	NA	NA	
Approach	13	10	17	40	5.0		0.413				
East: Ti Rakau Drive (East)											

Mov. From E To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	23	883	-	906	6.5	901	1.005	100	NA	NA
Lane 2	-	775	-	775	6.6	771 ¹	1.005	100	NA	NA
Lane 3	-	-	258	258	8.6	505	0.511	47 ⁶	98.9	2
Lane 4	-	-	548	548	8.6	505	1.084	100	100.0	3
Approach	23	1658	806	2487	7.2		1.084			
North: Gossamer Drive										
Mov. From N To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	259	-	-	259	17.8	757	0.342	100	NA	NA
Lane 2	246	-	-	246	17.8	719 ¹	0.342	100	NA	NA
Lane 3	-	12	49	61	4.9	238	0.256	100	3.8	2
Approach	505	12	49	566	16.4		0.342			
West: Ti Rakau Drive (West)										
Mov. From W To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	163	-	-	163	0.5	822	0.198	28 ⁵	11.1	2
Lane 2	-	333	-	333	2.8	467 ¹	0.712	100	NA	NA
Lane 3	-	423	-	423	2.8	594 ¹	0.712	100	NA	NA
Lane 4	-	-	16	16	0.0	312	0.052	100	0.0	3
Approach	163	755	16	934	2.3		0.712			
Total %HV Deg. Satn (v/c)										
Intersection	4027	7.4		1.084						

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- 1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
- 5 Lane under-utilisation found by the program
- 6 Lane under-utilisation due to downstream effects

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec		
South Exit: Fremantle Place Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Ti Rakau Drive (East) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: Gossamer Drive Merge Type: Zipper												
Exit Short Lane	1	80	50.0	258	269	2.50	2.00	421	1474	0.285	0.0	0.2
Merge Lane	2	-	50.0	210	216	2.50	2.00	515	1543	0.334	0.0	0.1
West Exit: Ti Rakau Drive (West) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

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Appendix Q

Construction Scenario 1.4 – Phasing Diagrams

PHASING SUMMARY

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 84 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Map Extract Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

Phase	A	B	C	D	E
Phase Change Time (sec)	0	13	25	47	59
Green Time (sec)	7	6	16	6	19
Phase Time (sec)	13	12	22	12	25
Phase Split	15%	14%	26%	14%	30%













See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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PHASING SUMMARY

Site: 1.4v [1.4 William Roberts/ Pakuranga Rd - PD - Conversion (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 61 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Convert Function Default

Reference Phase: Phase B

Input Phase Sequence: A, B, C

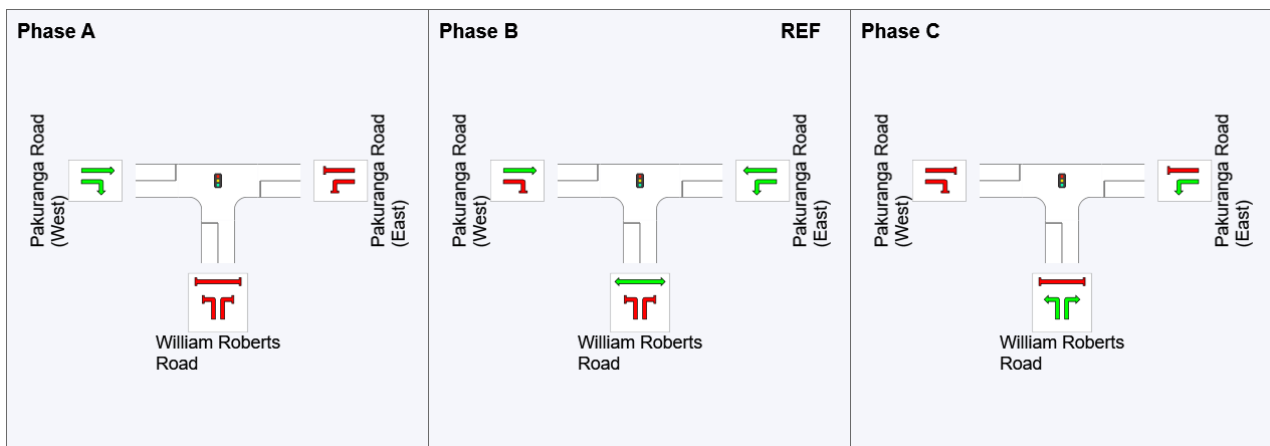
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	49	0	32
Green Time (sec)	6	26	11
Phase Time (sec)	12	32	17
Phase Split	20%	52%	28%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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PHASING SUMMARY

Site: 1.5 [1.5 Saint Kentigern/ Pakuranga Rd - PD (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 87 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Leading Right Turn

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D

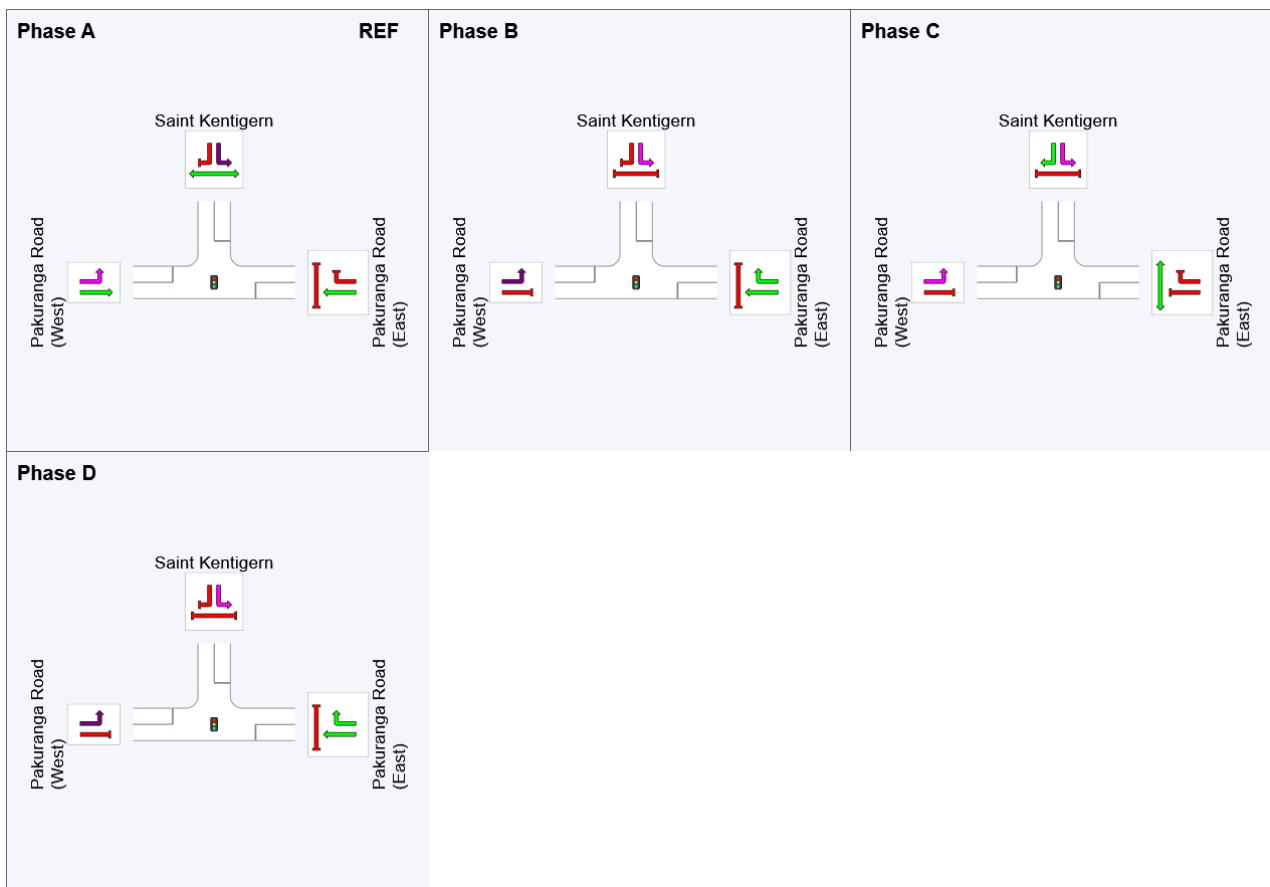
Output Phase Sequence: A, B, C, D

Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	0	35	47	75
Green Time (sec)	29	6	22	6
Phase Time (sec)	35	12	28	12
Phase Split	40%	14%	32%	14%

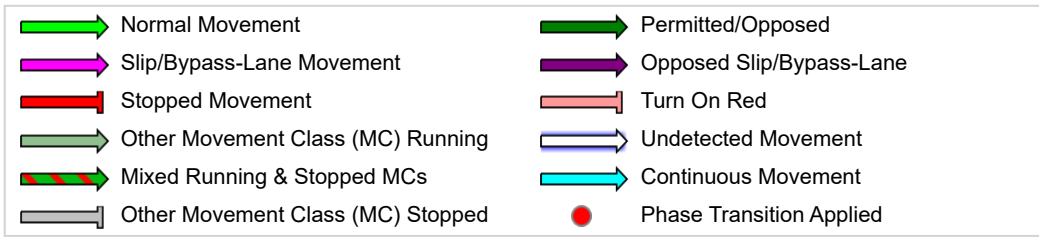
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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PHASING SUMMARY

Site: 4.0 [4.0 Palm Ave / Aylesbury St - Import (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 82 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Green Split Priority has been specified

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D

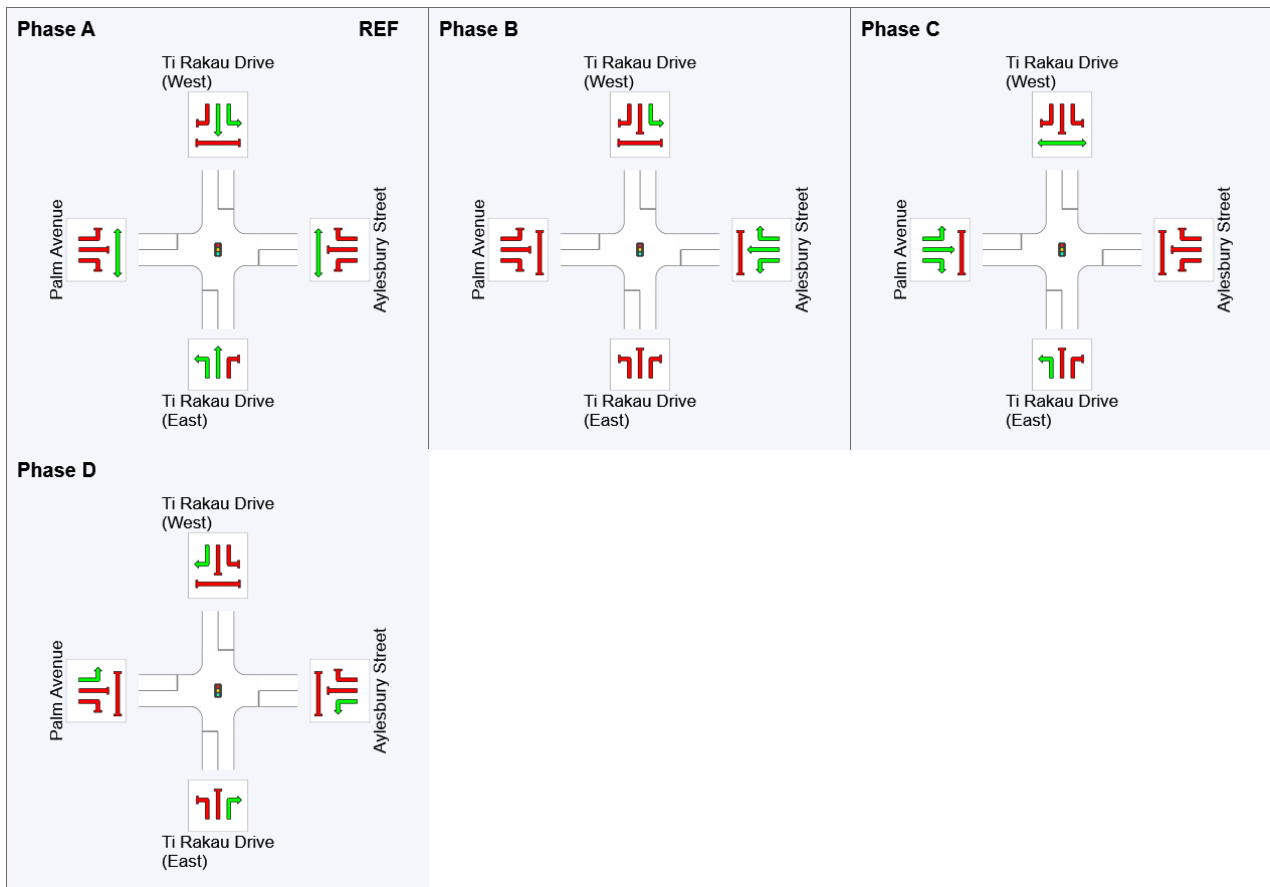
Output Phase Sequence: A, B, C, D

Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	0	35	47	70
Green Time (sec)	29	6	17	6
Phase Time (sec)	35	12	23	12
Phase Split	43%	15%	28%	15%

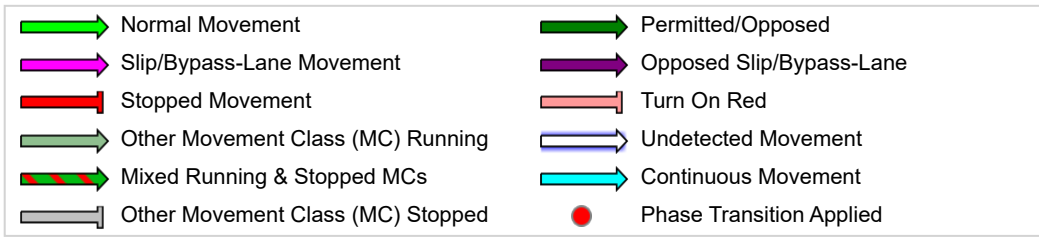
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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PHASING SUMMARY

Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 89 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Map Extract Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C

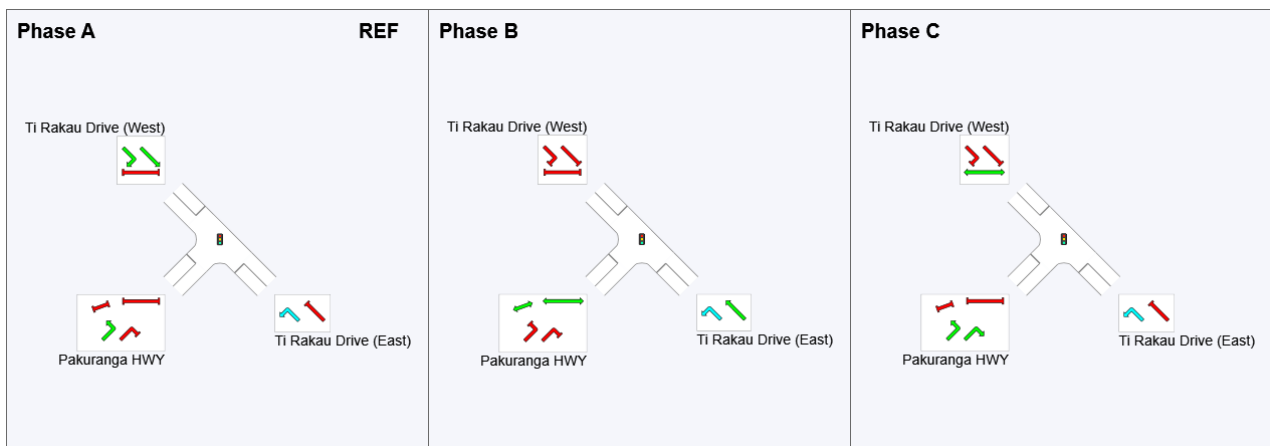
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	33	58
Green Time (sec)	27	19	25
Phase Time (sec)	33	25	31
Phase Split	37%	28%	35%

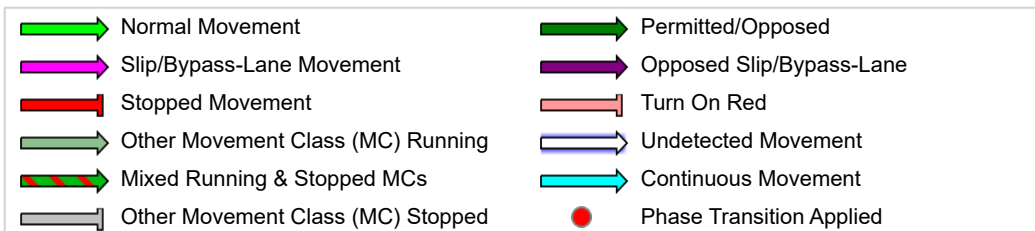
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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PHASING SUMMARY

Site: 7.0 [7.0 Mattson Rd/ Ti Rakau Dr (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 81 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Map Extract Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C

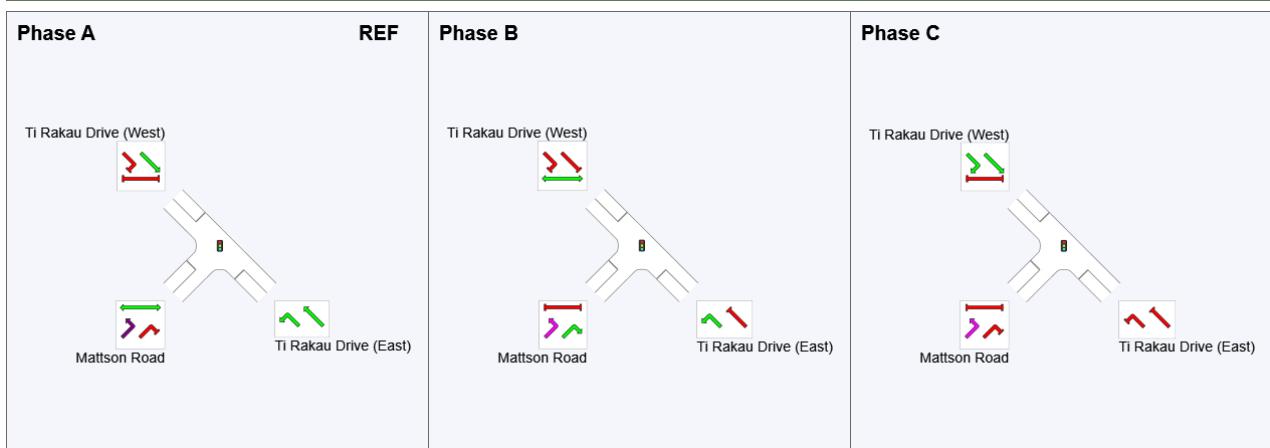
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	51	69
Green Time (sec)	45	12	6
Phase Time (sec)	51	18	12
Phase Split	63%	22%	15%

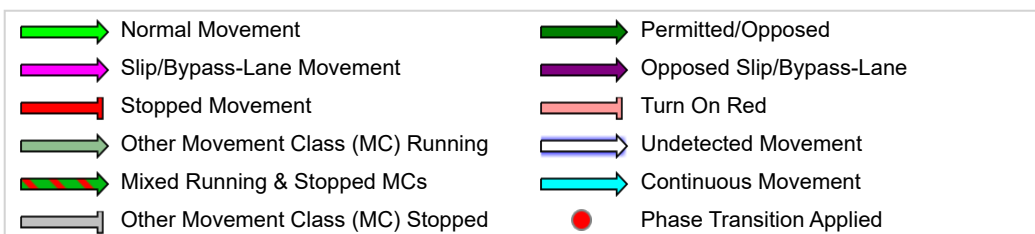
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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PHASING SUMMARY

Site: 10.0 [10.0 Edgewater Dr (West) / Chevis Pl (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 91 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D

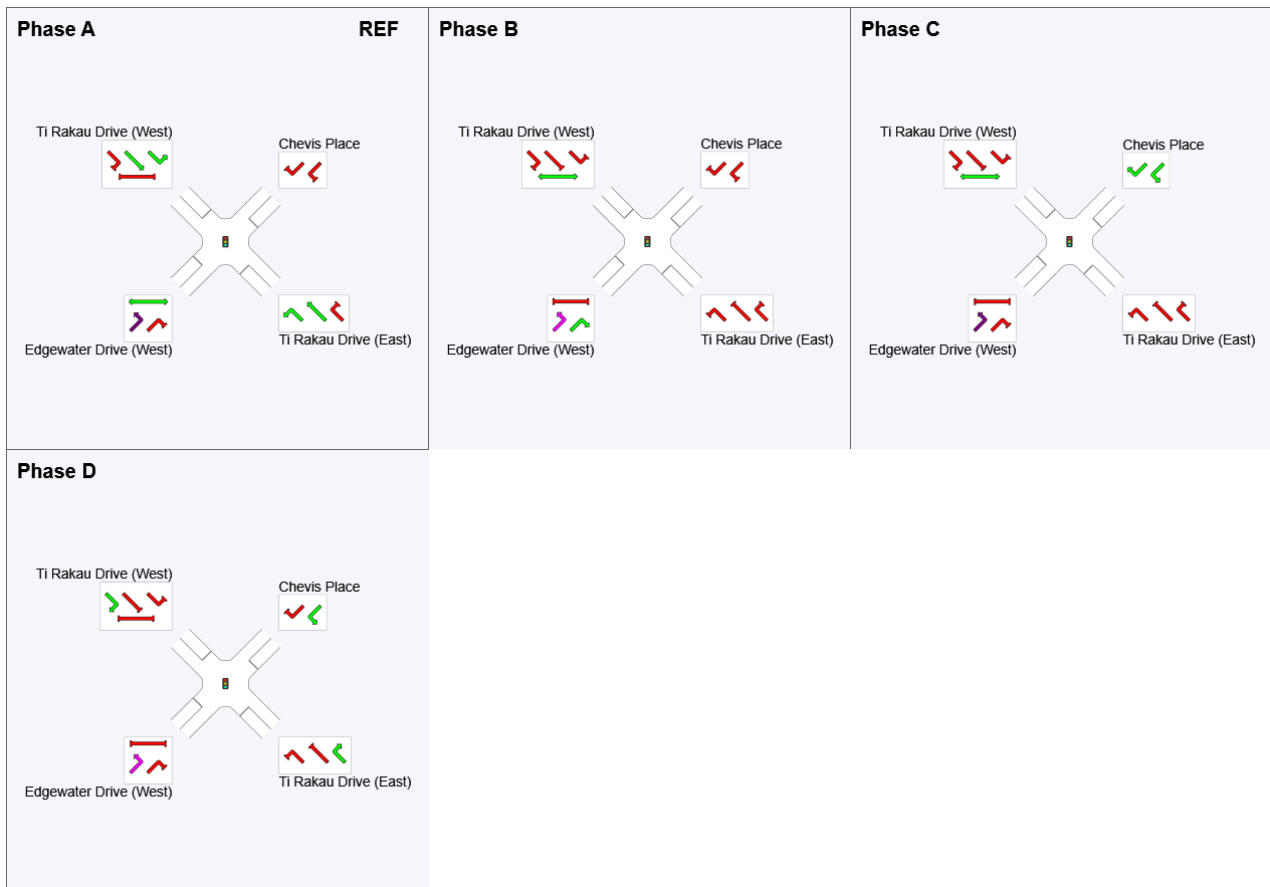
Output Phase Sequence: A, B, C, D

Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	0	55	67	79
Green Time (sec)	49	6	6	6
Phase Time (sec)	55	12	12	12
Phase Split	60%	13%	13%	13%













See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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PHASING SUMMARY

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

Scheme Design

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 132 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

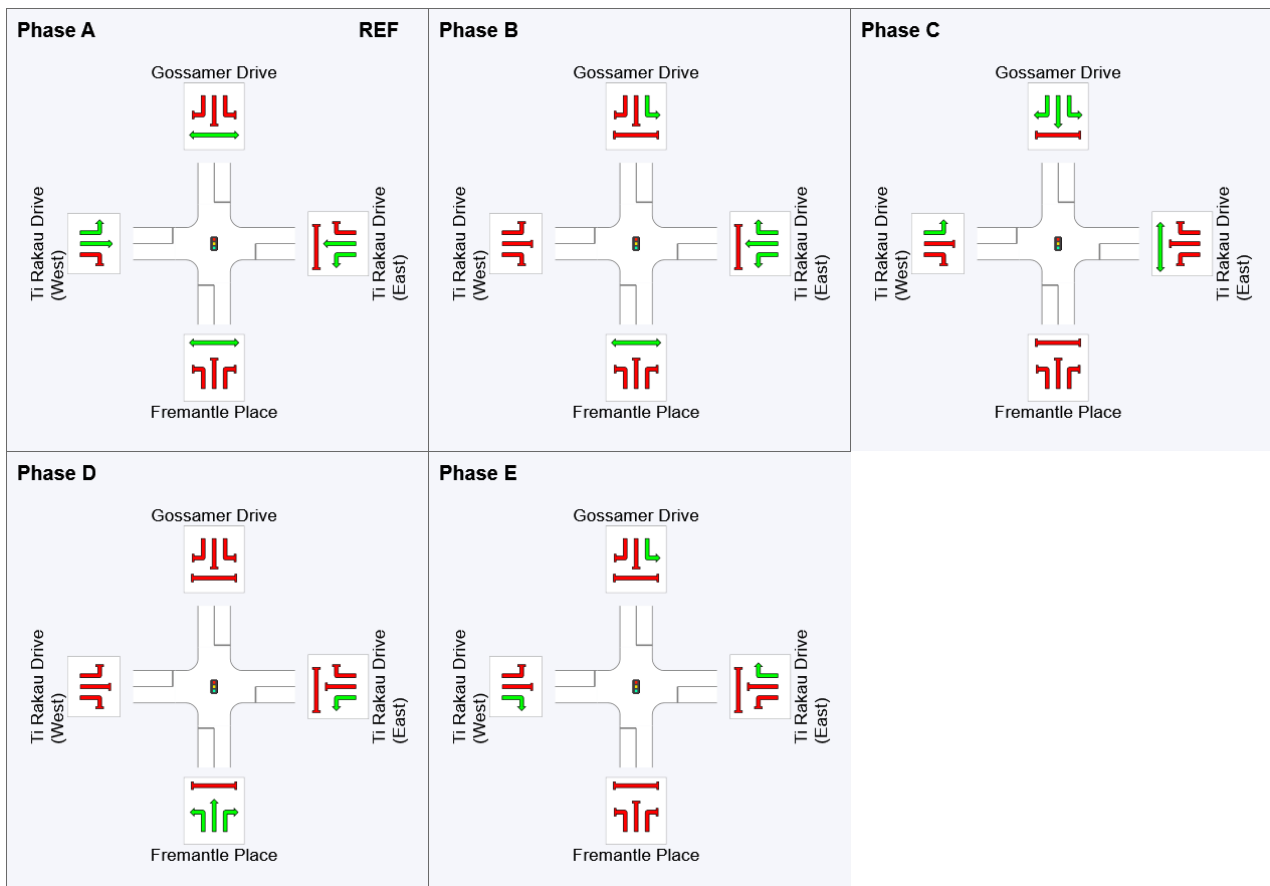
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

Phase	A	B	C	D	E
Phase Change Time (sec)	0	47	61	97	109
Green Time (sec)	41	8	30	6	17
Phase Time (sec)	47	14	36	12	23
Phase Split	36%	11%	27%	9%	17%













See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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TIME - DISTANCE DIAGRAM

Time – Distance Diagram for the Selected Route

Movement Class: Light Vehicles

➔ Route: R101 [Route1]

■ Network: N101 [PM (Network Folder: General)]

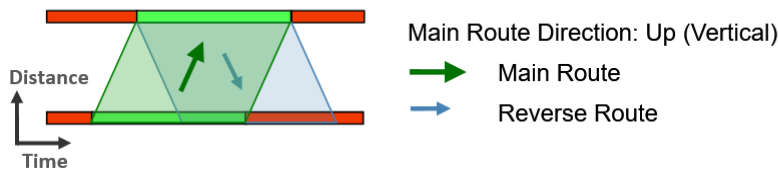
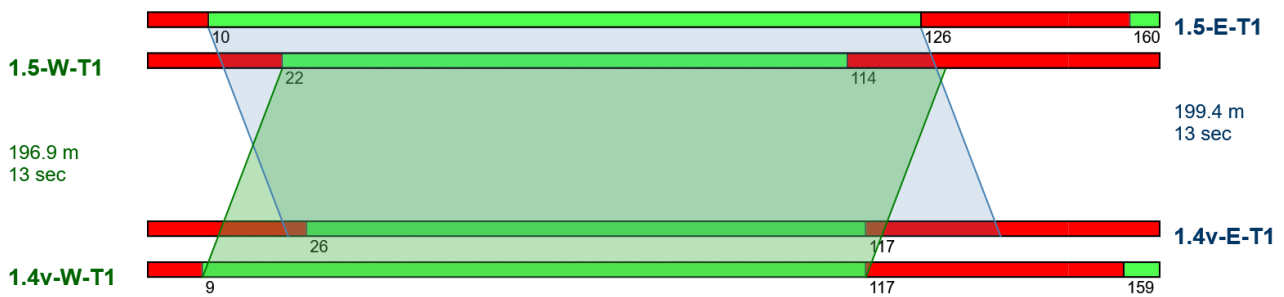
New Route

Network Category: (None)

Network Cycle Time = 150 seconds (Network User-Given Cycle Time)

Signal Offsets option used: User

Interactive Offsets



PHASING SUMMARY

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 80 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Map Extract Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

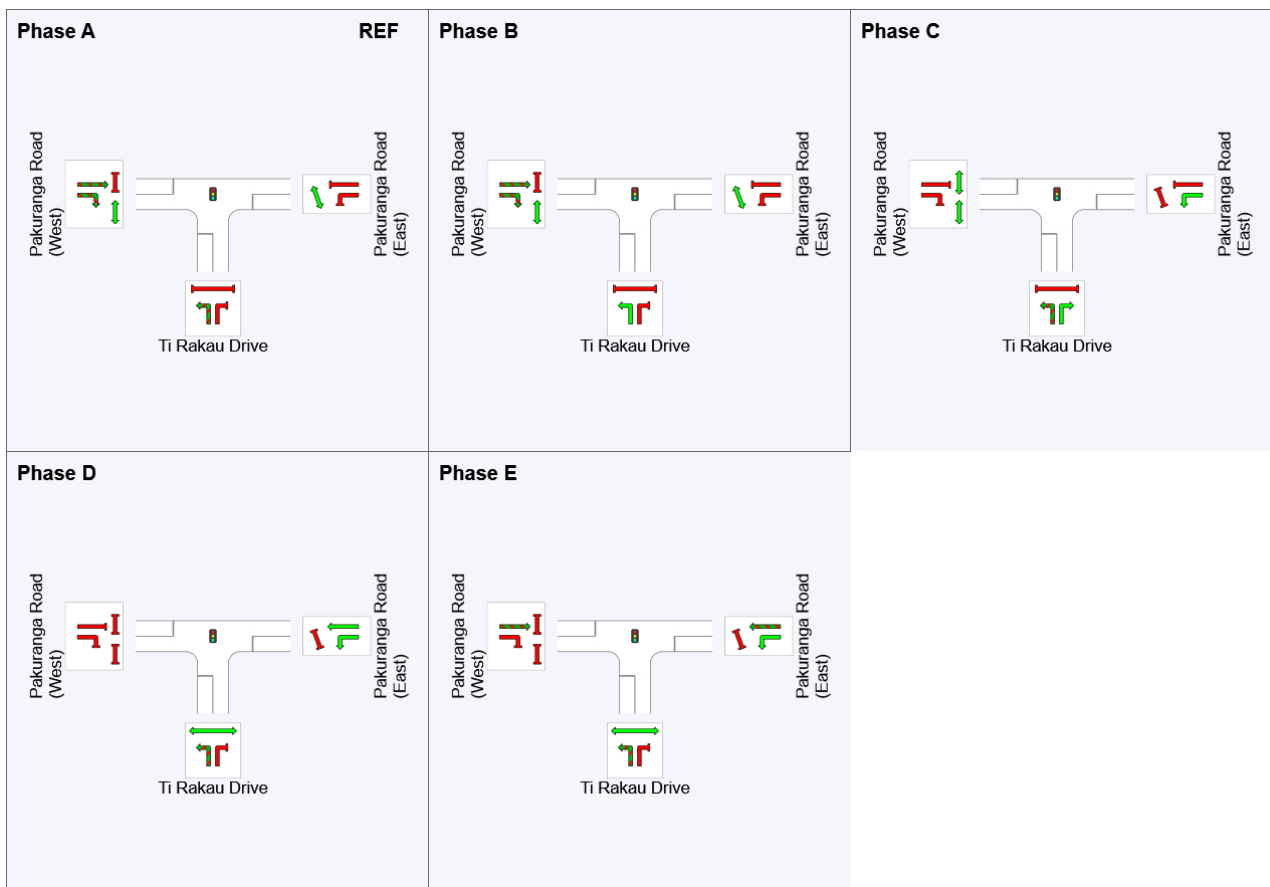
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

Phase	A	B	C	D	E
Phase Change Time (sec)	0	18	30	55	67
Green Time (sec)	12	6	19	6	7
Phase Time (sec)	18	12	25	12	13
Phase Split	23%	15%	31%	15%	16%

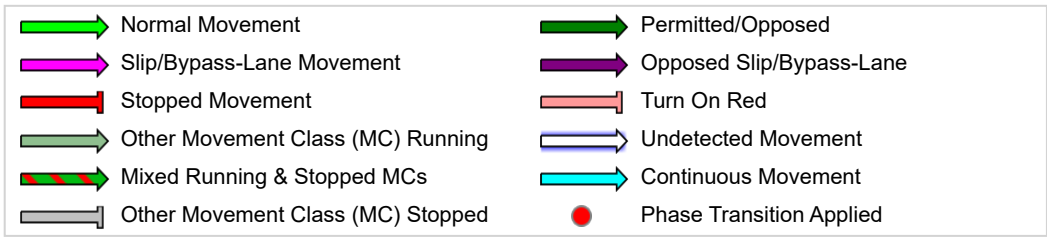
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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PHASING SUMMARY

Site: 1.4v [1.4 William Roberts/ Pakuranga Rd - PD - Conversion (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Convert Function Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C

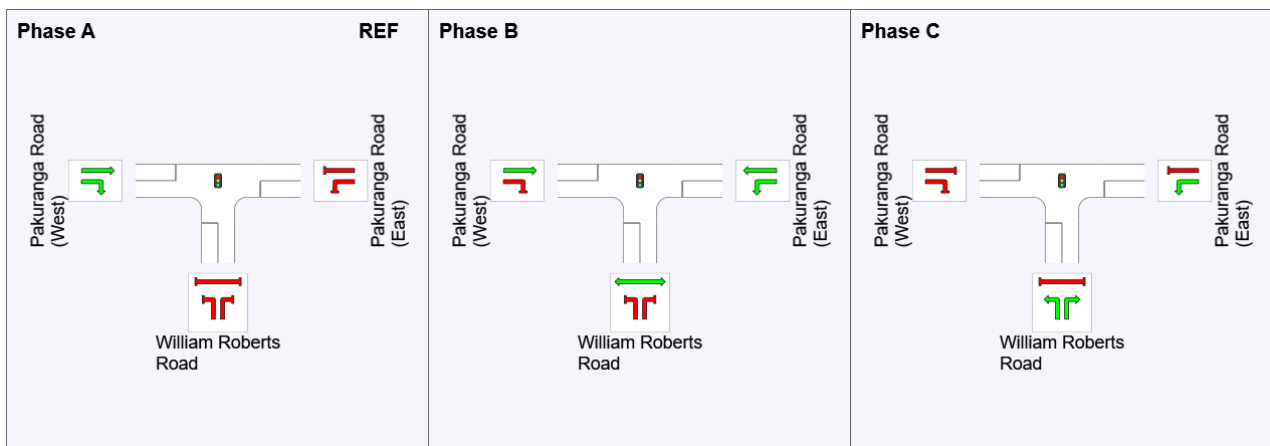
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	17	114
Green Time (sec)	11	91	30
Phase Time (sec)	17	97	36
Phase Split	11%	65%	24%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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PHASING SUMMARY

Site: 1.5 [1.5 Saint Kentigern/ Pakuranga Rd - PD (Site Folder: Network: N101 [PM (Network General) Folder: General])

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Leading Right Turn

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D

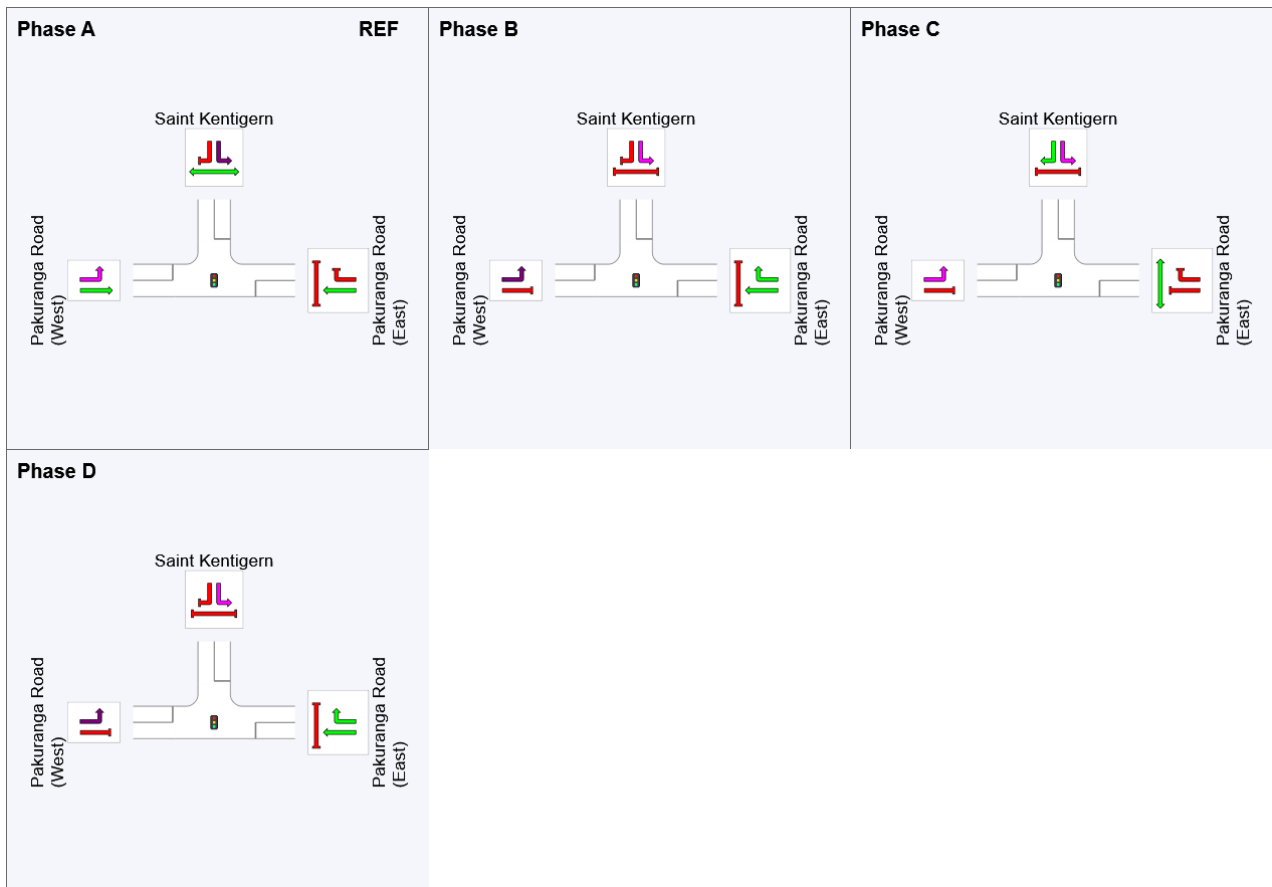
Output Phase Sequence: A, B, C, D

Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	13	111	123	1
Green Time (sec)	92	6	22	6
Phase Time (sec)	98	12	28	12
Phase Split	65%	8%	19%	8%













See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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PHASING SUMMARY

Site: 4.0 [4.0 Palm Ave / Aylesbury St - Import (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D

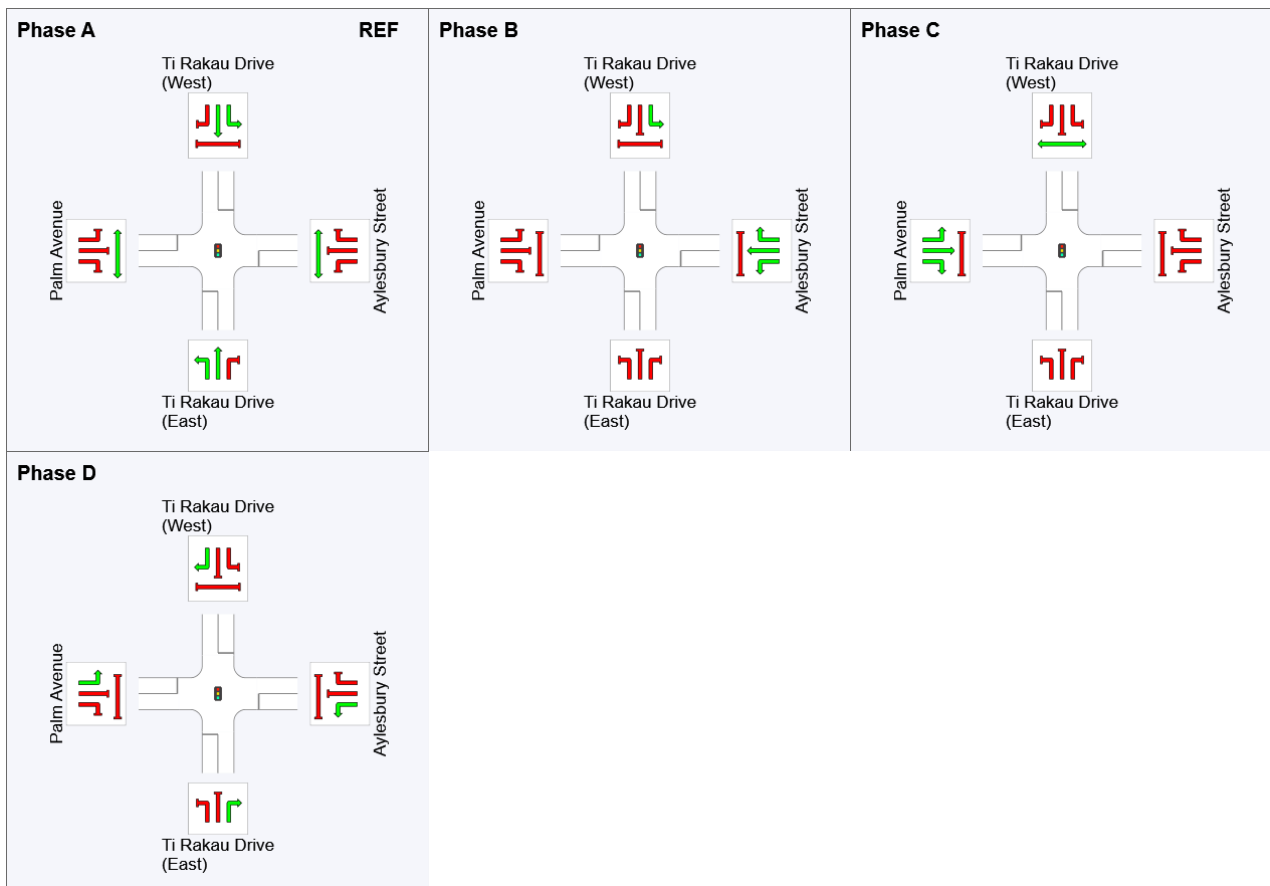
Output Phase Sequence: A, B, C, D

Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	0	111	123	141
Green Time (sec)	105	6	12	6
Phase Time (sec)	111	12	15	12
Phase Split	74%	8%	10%	8%










See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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PHASING SUMMARY

Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Map Extract Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C

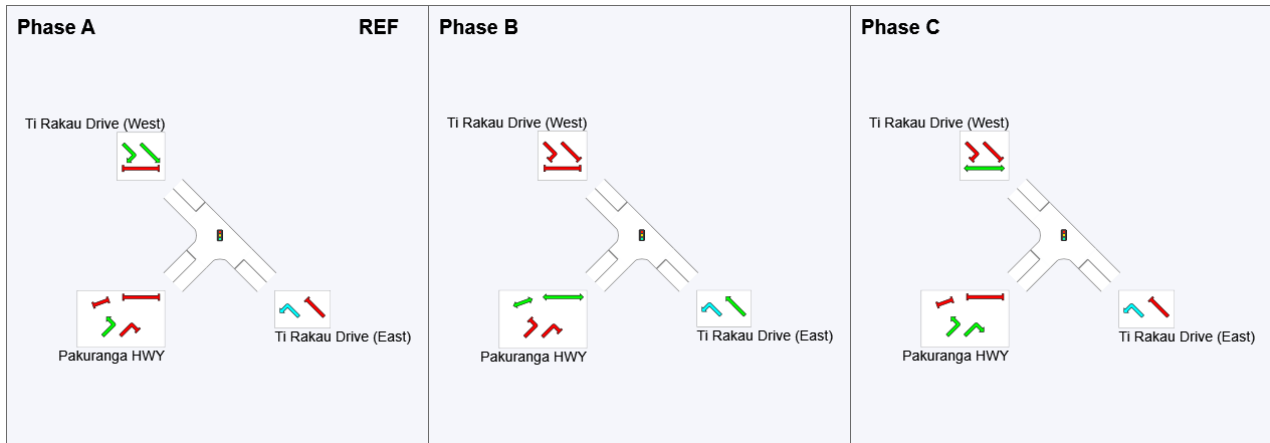
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	50	100
Green Time (sec)	44	44	44
Phase Time (sec)	50	50	50
Phase Split	33%	33%	33%

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

PHASING SUMMARY

Site: 7.0 [7.0 Mattson Rd/ Ti Rakau Dr (Site Folder: General)] Network: N101 [PM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 68 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Map Extract Default

Reference Phase: Phase A

Input Phase Sequence: A, B, C

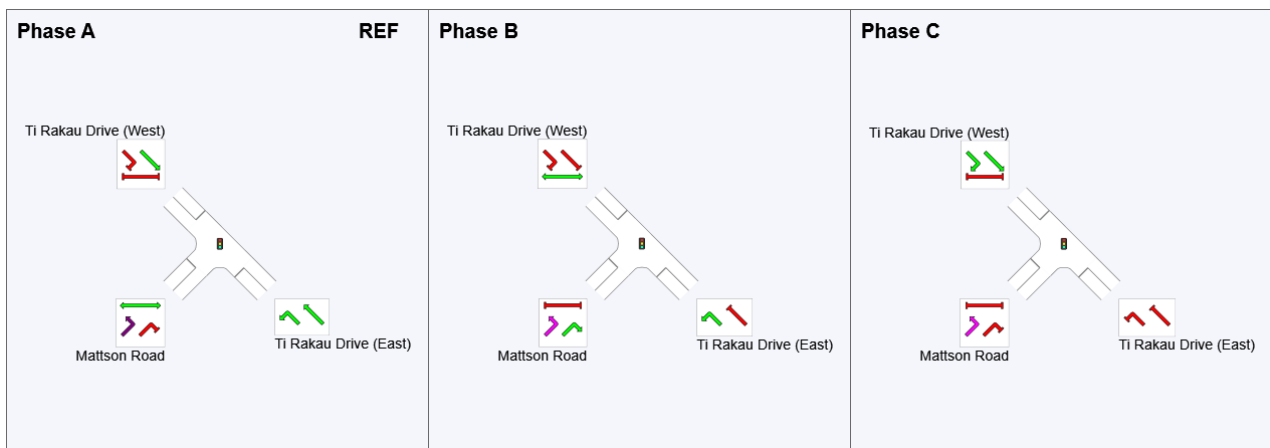
Output Phase Sequence: A, B, C

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	40	56
Green Time (sec)	34	10	6
Phase Time (sec)	40	16	12
Phase Split	59%	24%	18%

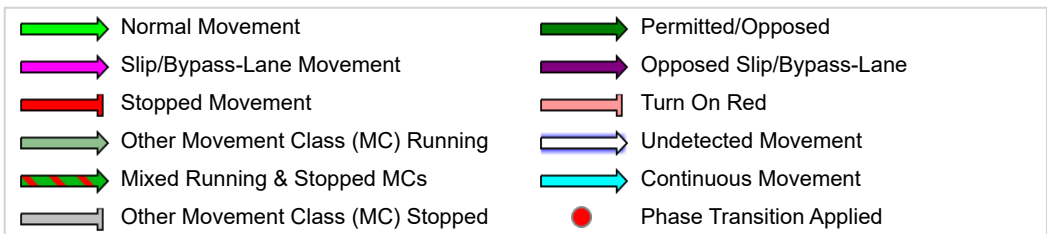
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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PHASING SUMMARY

Site: 10.0 [10.0 Edgewater Dr (West) / Chevis Pl (Site Folder: General)] Network: N101 [PM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 105 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D

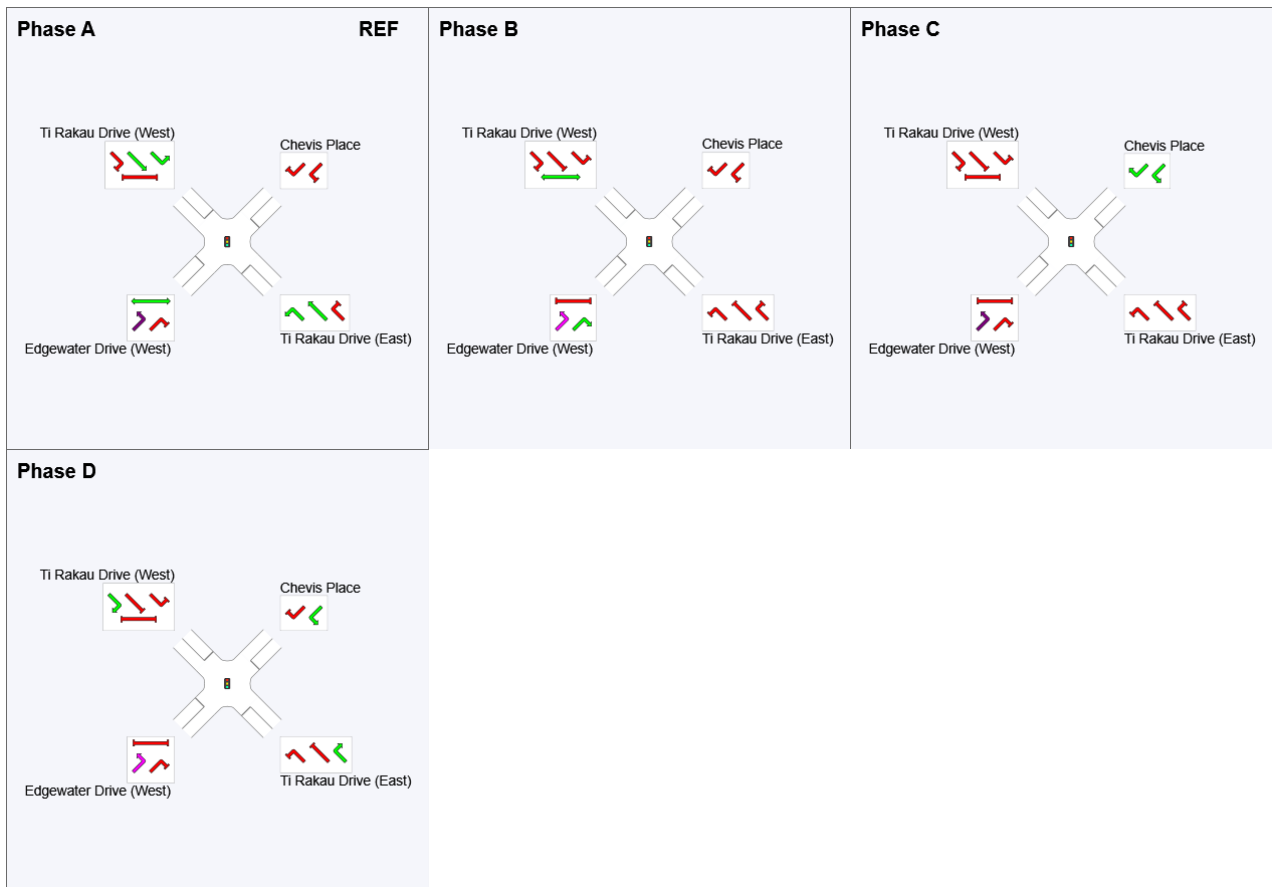
Output Phase Sequence: A, B, C, D

Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	0	61	81	93
Green Time (sec)	55	14	6	6
Phase Time (sec)	61	20	12	12
Phase Split	58%	19%	11%	11%













See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

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PHASING SUMMARY

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

Scheme Design

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E

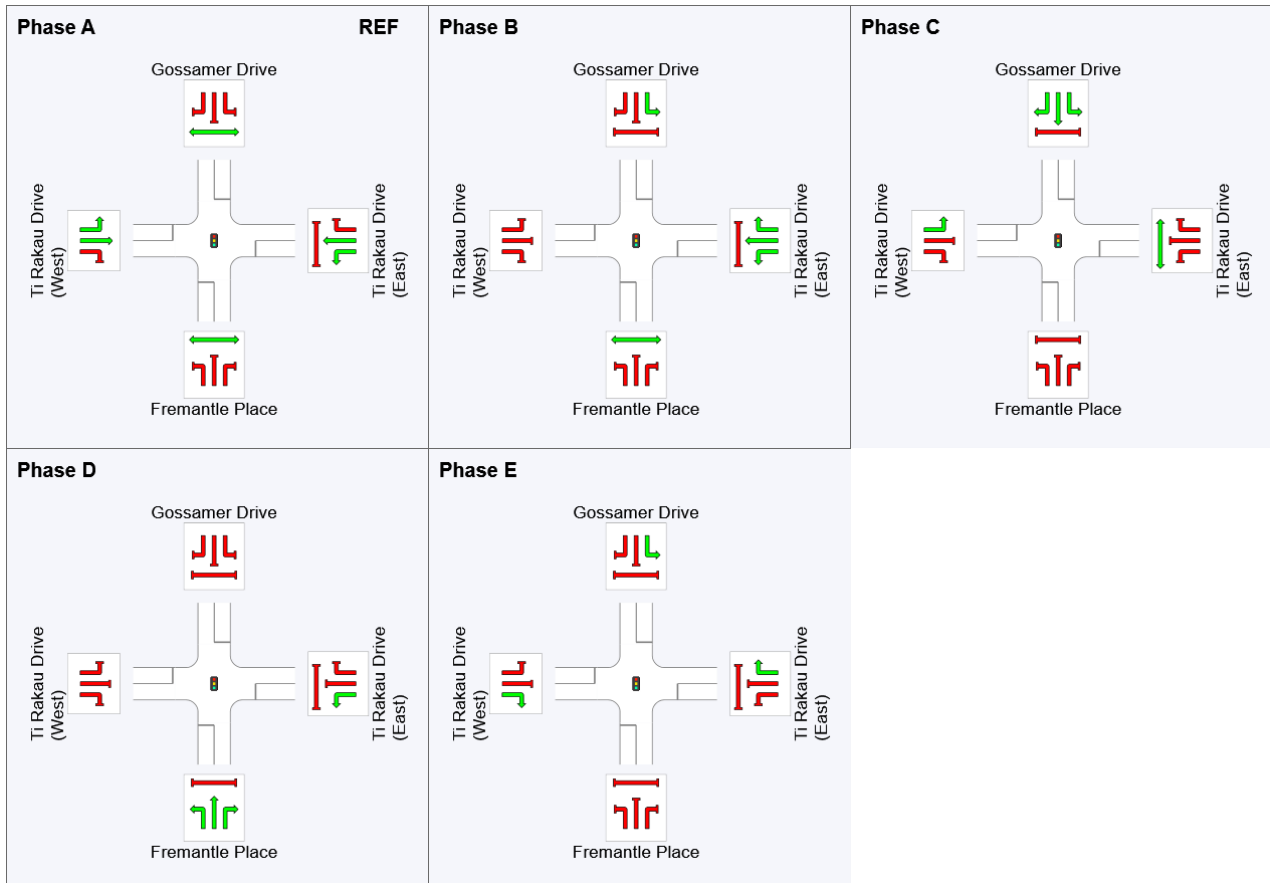
Output Phase Sequence: A, B, C, D, E

Phase Timing Summary

Phase	A	B	C	D	E
Phase Change Time (sec)	0	55	79	105	118
Green Time (sec)	49	18	20	8	26
Phase Time (sec)	55	24	25	14	32
Phase Split	37%	16%	17%	9%	21%

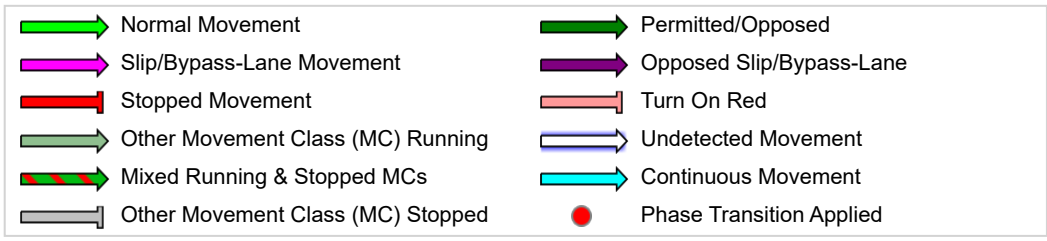
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase

VAR: Variable Phase



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Appendix R

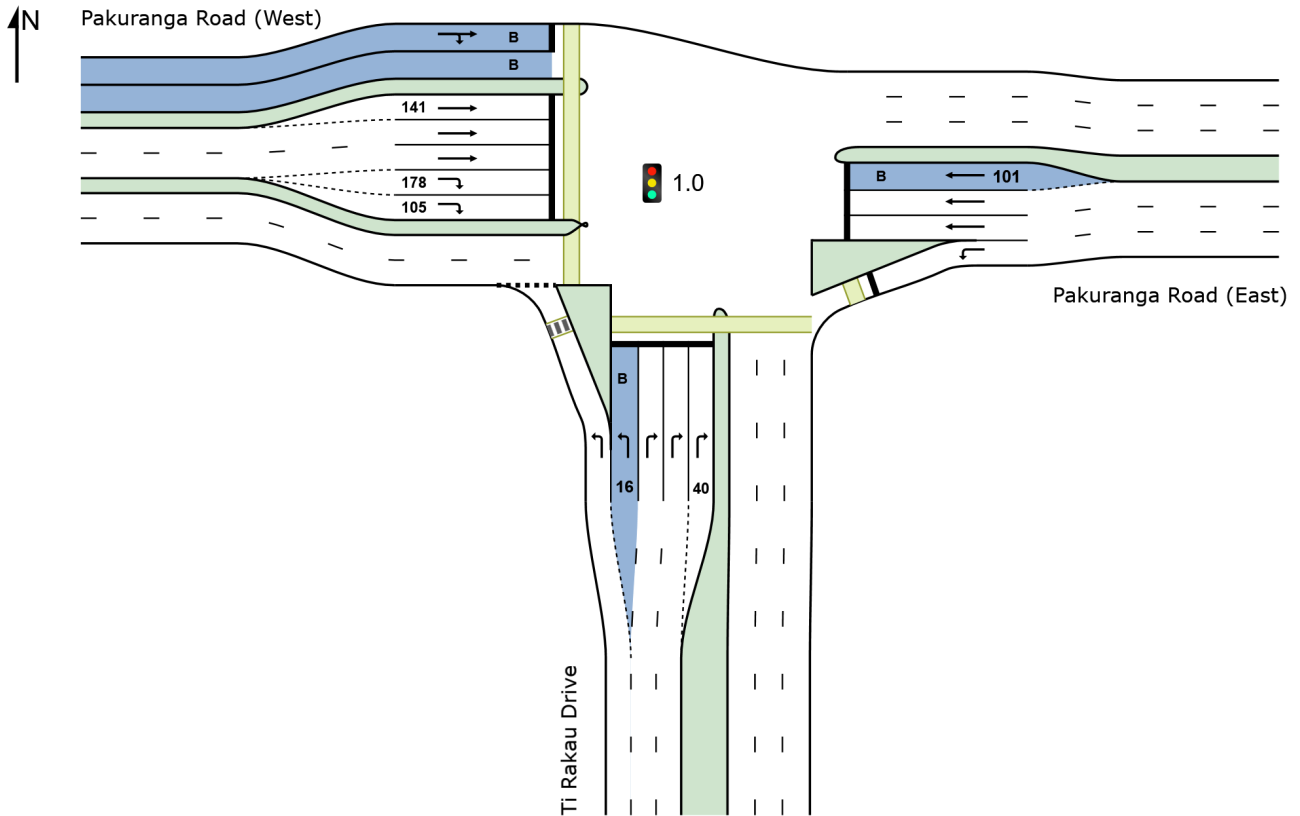
Construction Scenario 1.4 – Lane Performance Summaries

SITE LAYOUT

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 84 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV %	[Total veh/h	HV %						[Veh	Dist] m				
South: Ti Rakau Drive															
Lane 1	579	8.6	567	8.5	896 ¹	0.633	100	13.7	LOS B	12.4	93.0	Full	174	0.0	0.0
Lane 2 (B)	17	100.0	17	100.0	121	0.141	100	47.3	LOS D	0.6	8.1	Short	16	0.0	NA
Lane 3	191	4.0	187	4.0	342	0.546	100	38.7	LOS D	6.4	46.3	Full	174	0.0	0.0
Lane 4	191	4.0	187	4.0	342	0.546	100	38.7	LOS D	6.4	46.3	Full	174	0.0	0.0
Lane 5	191	4.0	187	4.0	342	0.546	100	38.7	LOS D	6.4	46.3	Short	40	0.0	NA
Approach	1168	7.7	1144 ^N ₁	7.7		0.633		26.4	LOS C	12.4	93.0				
East: Pakuranga Road (East)															
Lane 1	832	4.8	812	4.8	1127	0.720	100	16.9	LOS B	20.1	146.3	Full	113	0.0	38.7
Lane 2	626	6.1	611	6.0	689	0.887	100	38.5	LOS D	22.4 ^{N4}	165.1 ^{N4}	Full	113	0.0	50.0
Lane 3	626	6.1	611	6.0	689	0.887	100	38.5	LOS D	22.4 ^{N4}	165.1 ^{N4}	Full	113	0.0	50.0
Lane 4 (B)	25	100.0	25	100.0	85	0.293	100	45.6	LOS D	1.0	12.5	Short	101	0.0	NA
Approach	2109	6.7	2059 ^N ₁	6.7		0.887		30.0	LOS C	22.4	165.1				
West: Pakuranga Road (West)															
Lane 1 (B)	24	100.0	24	100.0	81	0.297	100	44.1	LOS D	0.9	11.4	Full	388	0.0	0.0
Lane 2	318	9.6	318	9.6	695	0.458	100	21.1	LOS C	8.8	66.8	Short	141	0.0	NA
Lane 3	318	9.6	318	9.6	695	0.458	100	21.1	LOS C	8.8	66.8	Full	388	0.0	0.0
Lane 4	318	9.6	318	9.6	695	0.458	100	21.1	LOS C	8.8	66.8	Full	388	0.0	0.0
Lane 5	131	11.5	131	11.5	142	0.920	100	62.1	LOS E	6.0	45.9	Short	178	0.0	NA
Lane 6	131	11.5	131	11.5	142	0.920	100	62.1	LOS E	6.0	45.9	Short	105	0.0	NA
Approach	1241	11.8	1241	11.8		0.920		30.2	LOS C	8.8	66.8				
Intersection	4518	8.3	4444 ^N ₁	8.5		0.920		29.2	LOS C	22.4	165.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)										
South: Ti Rakau Drive										
Mov. From S To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.	
	W	E								
Lane 1	567	-	567	8.5	896 ¹	0.633	100	NA	NA	
Lane 2	17	-	17	100.0	121	0.141	100	0.0	1	
Lane 3	-	187	187	4.0	342	0.546	100	NA	NA	

Lane 4	-	187	187	4.0	342	0.546	100	NA	NA
Lane 5	-	187	187	4.0	342	0.546	100	28.4	4
Approach	584	560	1144	7.7		0.633			
East: Pakuranga Road (East)									
Mov. From E To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	S	W							
Lane 1	812	-	812	4.8	1127	0.720	100	NA	NA
Lane 2	-	611	611	6.0	689	0.887	100	NA	NA
Lane 3	-	611	611	6.0	689	0.887	100	NA	NA
Lane 4	-	25	25	100.0	85	0.293	100	0.0	3
Approach	812	1247	2059	6.7		0.887			
West: Pakuranga Road (West)									
Mov. From W To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	E	S							
Lane 1	9	15	24	100.0	81	0.297	100	NA	NA
Lane 2	318	-	318	9.6	695	0.458	100	0.0	3
Lane 3	318	-	318	9.6	695	0.458	100	NA	NA
Lane 4	318	-	318	9.6	695	0.458	100	NA	NA
Lane 5	-	131	131	11.5	142	0.920	100	0.0	4
Lane 6	-	131	131	11.5	142	0.920	100	0.0	5
Approach	964	277	1241	11.8		0.920			
Total %HV Deg. Satn (v/c)									
Intersection	4444	8.5		0.920					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- 1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

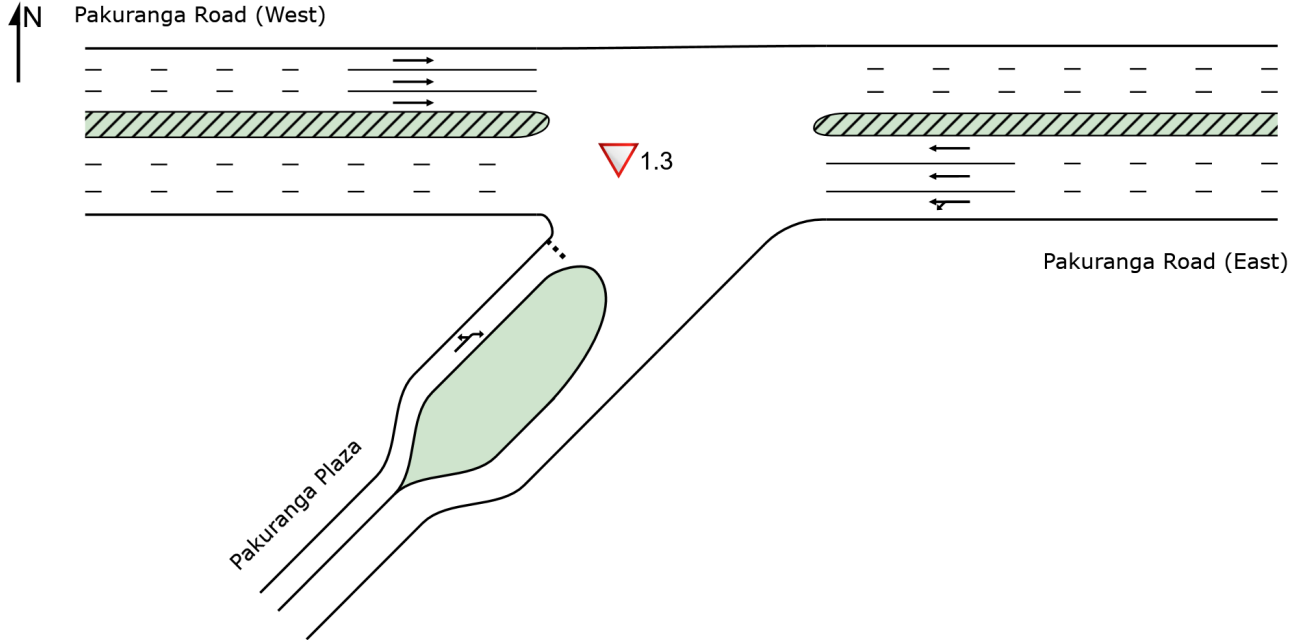
Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
South Exit: Ti Rakau Drive											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
Full Length Lane	2										Merge Analysis not applied.
Full Length Lane	3										Merge Analysis not applied.
East Exit: Pakuranga Road (East)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
Full Length Lane	2										Merge Analysis not applied.
Full Length Lane	3										Merge Analysis not applied.
West Exit: Pakuranga Road (West)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
Full Length Lane	2										Merge Analysis not applied.
Full Length Lane	3										Merge Analysis not applied.

SITE LAYOUT

▽ Site: 1.3 [1.3 Mall/ Pakuranga Rd - PD (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandenneever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.4\CS 1.4 AM - V1.sip9

LANE SUMMARY

Site: 1.3 [1.3 Mall/ Pakuranga Rd - PD (Site Folder: General)]

Network: N101 [AM
(Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS [Total HV] veh/h %		ARRIVAL FLOWS [Total HV] veh/h %		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %	
East: Pakuranga Road (East)															
Lane 1	719	8.5	719	8.5	1844	0.390	100	1.4	LOS A	0.0	0.0	Full	152	0.0	0.0
Lane 2	737	5.6	737	5.6	1892	0.390	100	0.0	LOS A	0.0	0.0	Full	152	0.0	0.0
Lane 3	737	5.6	737	5.6	1892	0.390	100	0.0	LOS A	0.0	0.0	Full	152	0.0	0.0
Approach	2193	6.5	2193	6.5		0.390		0.5	NA	0.0	0.0				
West: Pakuranga Road (West)															
Lane 1	509	8.1	506	8.1	1785	0.283	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Lane 2	509	8.1	506	8.1	1785	0.283	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Lane 3	506	8.1	503	8.1	1775	0.283	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Approach	1524	8.1	1514 ^{N1}	8.1		0.283		0.0	NA	0.0	0.0				
SouthWest: Pakuranga Plaza															
Lane 1	54	5.6	54	5.6	11	4.747	100	3565.0	LOS F	26.0	190.8	Full	196	-11.4 ^{N7}	14.0
Approach	54	5.6	54	5.6		4.747		3565.0	LOS F	26.0	190.8				
Intersection	3771	7.2	3761 ^{N1}	7.2		4.747		51.5	NA	26.0	190.8				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N7} The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)										
East: Pakuranga Road (East)										
Mov. From E To Exit:	L1	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SW	W								
Lane 1	180	539	719	8.5	1844	0.390	100	NA	NA	
Lane 2	-	737	737	5.6	1892	0.390	100	NA	NA	
Lane 3	-	737	737	5.6	1892	0.390	100	NA	NA	
Approach	180	2013	2193	6.5		0.390				
West: Pakuranga Road (West)										
Mov. From W To Exit:	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.		
	E									
Lane 1	506	506	8.1	1785	0.283	100	NA	NA		
Lane 2	506	506	8.1	1785	0.283	100	NA	NA		

Lane 3	503	503	8.1		1775	0.283	100	NA	NA
Approach	1514	1514	8.1			0.283			
SouthWest: Pakuranga Plaza									
Mov. From SW To Exit:	L3 W	R1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.
Lane 1	29	25	54	5.6	11	4.747	100	NA	NA
Approach	29	25	54	5.6		4.747			
Total %HV Deg. Satn (v/c)									
Intersection	3761	7.2		4.747					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

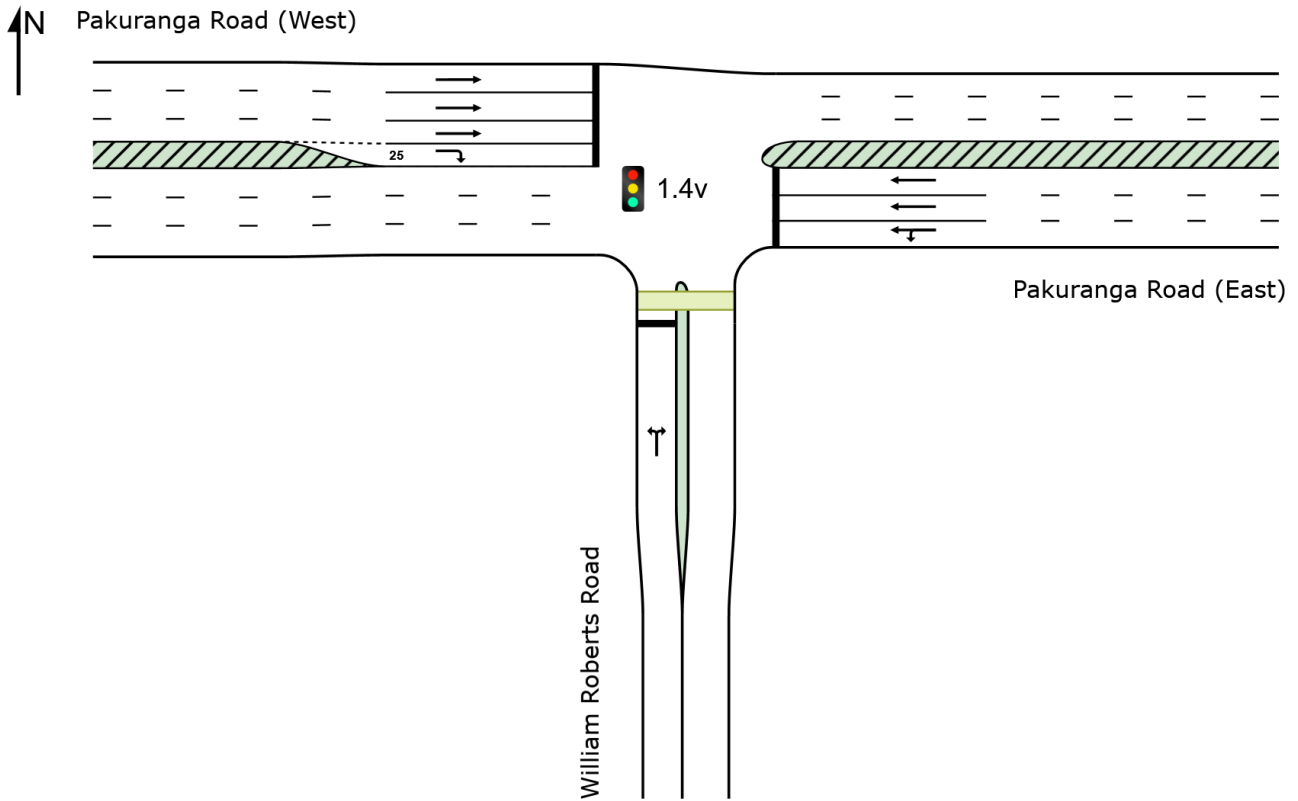
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: Pakuranga Road (East)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											
West Exit: Pakuranga Road (West)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											
SouthWest Exit: Pakuranga Plaza												
Merge Type: Not Applied												
Full Length Lane	1											

SITE LAYOUT

 Site: 1.4v [1.4 William Roberts/ Pakuranga Rd - PD - Conversion (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise | Created: Wednesday, 15 February 2023 9:56:49 am
Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.4\CS 1.4 AM - V1.sip9

LANE SUMMARY

Site: 1.4v [1.4 William Roberts/ Pakuranga Rd - PD - Conversion (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 61 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS [Total HV]		ARRIVAL FLOWS [Total HV]		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE [Veh Dist]		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			m		m	%	%
South: William Roberts Road															
Lane 1	287	8.7	287	8.7	330	0.868	100	39.8	LOS D	9.1	68.7	Full	244	-0.4 ^{N7}	0.0
Approach	287	8.7	287	8.7		0.868		39.8	LOS D	9.1	68.7				
East: Pakuranga Road (East)															
Lane 1	699	6.0	699	6.0	790	0.885	100	29.7	LOS C	22.6	166.4	Full	184	0.0	5.9
Lane 2	688	6.2	688	6.2	778	0.885	100	28.9	LOS C	22.3	164.1	Full	184	0.0	4.6
Lane 3	696	6.2	696	6.2	786	0.885	100	28.8	LOS C	22.4	165.5	Full	184	0.0	5.4
Approach	2083	6.1	2083	6.1		0.885		29.1	LOS C	22.6	166.4				
West: Pakuranga Road (West)															
Lane 1	550	8.1	543	8.1	1142	0.475	100	6.7	LOS A	7.8	58.2	Full	152	0.0	0.0
Lane 2	532	8.1	525	8.1	1105	0.475	100	6.7	LOS A	7.5	56.4	Full	152	-3.2 ^{N3}	0.0
Lane 3	470	8.1	464	8.1	976 ¹	0.475	100	6.4	LOS A	6.4	48.1	Full	152	-3.2 ^{N3}	0.0
Lane 4	54	13.0	53	13.0	160	0.333	100	35.8	LOS D	1.4	11.2	Short	25	0.0	NA
Approach	1605	8.2	1585 ^{N1}	8.3		0.475		7.6	LOS A	7.8	58.2				
Intersection	3975	7.2	3955 ^{N1}	7.2		0.885		21.3	LOS C	22.6	166.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

^{N7} The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)										
South: William Roberts Road										
Mov. From S To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	W	E								
Lane 1	253	34	287	8.7	330	0.868	100	NA	NA	
Approach	253	34	287	8.7		0.868				
East: Pakuranga Road (East)										
Mov. From E To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	S	W								
Lane 1	143	556	699	6.0	790	0.885	100	NA	NA	
Lane 2	-	688	688	6.2	778	0.885	100	NA	NA	

Lane 3	-	696	696	6.2	786	0.885	100	NA	NA
Approach	143	1940	2083	6.1		0.885			
West: Pakuranga Road (West)									
Mov. From W To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	E	S							
Lane 1	543	-	543	8.1	1142	0.475	100	NA	NA
Lane 2	525	-	525	8.1	1105	0.475	100	NA	NA
Lane 3	464	-	464	8.1	976 ¹	0.475	100	NA	NA
Lane 4	-	53	53	13.0	160	0.333	100	0.0	3
Approach	1532	53	1585	8.3		0.475			
Total %HV Deg. Satn (v/c)									
Intersection	3955	7.2		0.885					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- ¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

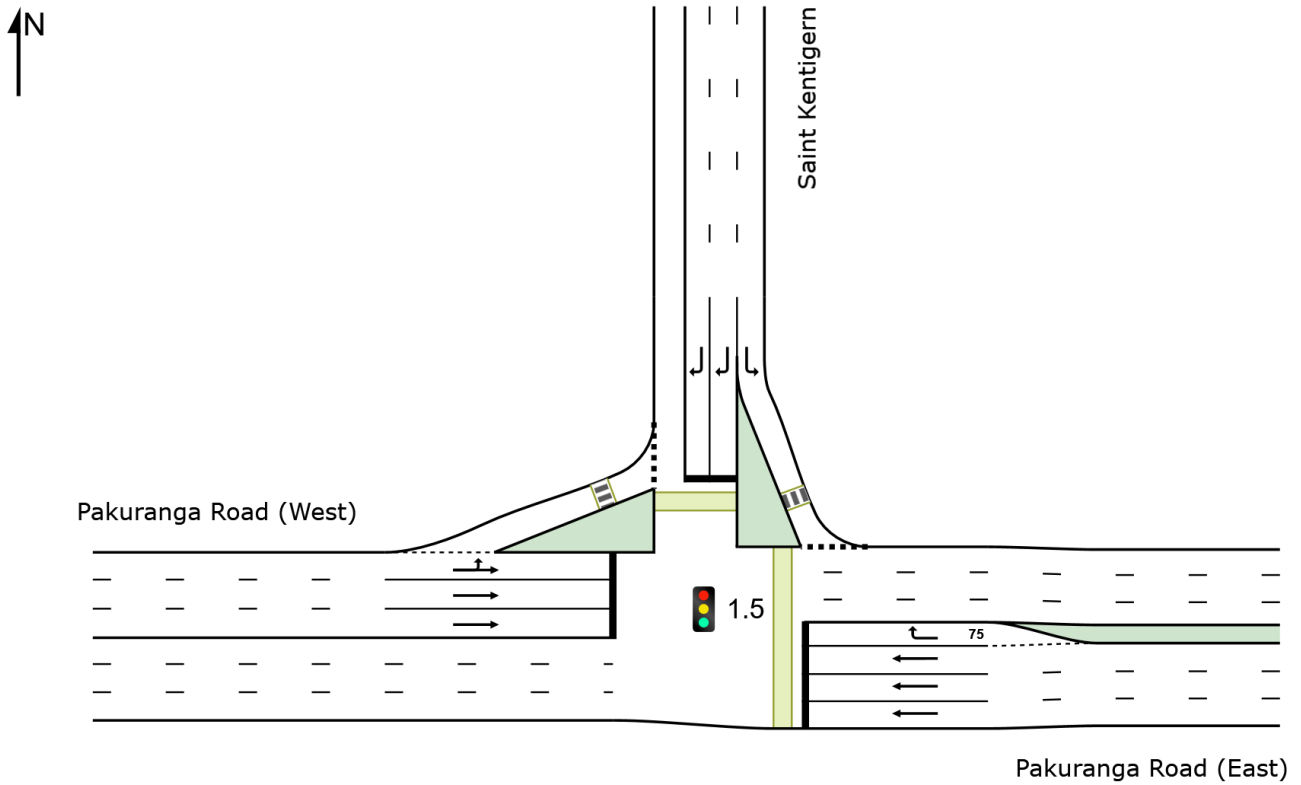
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
South Exit: William Roberts Road												
Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
East Exit: Pakuranga Road (East)												
Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
Full Length Lane	2		Merge Analysis not applied.									
Full Length Lane	3		Merge Analysis not applied.									
West Exit: Pakuranga Road (West)												
Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
Full Length Lane	2		Merge Analysis not applied.									
Full Length Lane	3		Merge Analysis not applied.									

SITE LAYOUT

Site: 1.5 [1.5 Saint Kentigern/ Pakuranga Rd - PD (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.4\CS 1.4 AM - V1.sip9

LANE SUMMARY

Site: 1.5 [1.5 Saint Kentigern/ Pakuranga Rd - PD (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 87 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]						[Veh	Dist]				
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			m		m	%	%
East: Pakuranga Road (East)															
Lane 1	685	6.3	685	6.3	1057	0.648	100	11.8	LOS B	16.8	123.6	Full	87	-5.9 ^{N7}	47.3
Lane 2	694	6.3	694	6.3	1071	0.648	100	11.8	LOS B	17.0	125.2	Full	87	-4.6 ^{N3}	48.6
Lane 3	672	6.3	672	6.3	1037	0.648	100	11.5	LOS B	16.1	119.0	Full	87	-5.4 ^{N3}	43.8
Lane 4	72	2.8	72	2.8	242	0.297	100	25.7	LOS C	1.5	10.5	Short	75	0.0	NA
Approach	2124	6.2	2124	6.2		0.648		12.2	LOS B	17.0	125.2				
North: Saint Kentigern															
Lane 1	13	0.0	13	0.0	947	0.014	100	5.9	LOS A	0.2	1.2	Full	96	0.0	0.0
Lane 2	20	10.0	20	10.0	412	0.049	100	26.6	LOS C	0.6	4.4	Full	96	-4.6 ^{N3}	0.0
Lane 3	20	10.0	20	10.0	402	0.049	100	26.6	LOS C	0.6	4.3	Full	96	-5.4 ^{N3}	0.0
Approach	53	7.5	53	7.5		0.049		21.5	LOS C	0.6	4.4				
West: Pakuranga Road (West)															
Lane 1	503	6.4	497	6.5	582	0.854	100	33.2	LOS C	18.6	137.1	Full	184	0.0	0.0
Lane 2	534	7.3	527	7.3	617	0.854	100	37.1	LOS D	21.7	161.5	Full	184	0.0	3.2
Lane 3	534	7.3	527	7.3	617	0.854	100	37.1	LOS D	21.7	161.5	Full	184	0.0	3.2
Approach	1570	7.0	1552 ^{N1}	7.0		0.854		35.8	LOS D	21.7	161.5				
Intersection	3747	6.5	3729 ^{N1}	6.6		0.854		22.1	LOS C	21.7	161.5				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

N3 Capacity Adjustment due to downstream lane blockage determined by the program.

N7 The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)										
East: Pakuranga Road (East)										
Mov.	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane No.	
From E To Exit:	W	N			veh/h	v/c	%	%		
Lane 1	685	-	685	6.3	1057	0.648	100	NA	NA	
Lane 2	694	-	694	6.3	1071	0.648	100	NA	NA	
Lane 3	672	-	672	6.3	1037	0.648	100	NA	NA	
Lane 4	-	72	72	2.8	242	0.297	100	0.0	3	
Approach	2052	72	2124	6.2		0.648				
North: Saint Kentigern										
Mov.	L2	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane	
From N					veh/h	v/c	%	%		

To Exit:	E	W			veh/h	v/c	%	%	No.
Lane 1	13	-	13	0.0	947	0.014	100	NA	NA
Lane 2	-	20	20	10.0	412	0.049	100	NA	NA
Lane 3	-	20	20	10.0	402	0.049	100	NA	NA
Approach	13	40	53	7.5		0.049			
West: Pakuranga Road (West)									
Mov.	L2	T1	Total	%HV		Deg.	Lane	Prob.	Ov.
From W					Cap.	Satn	Util.	SL Ov.	Lane
To Exit:	N	E			veh/h	v/c	%	%	No.
Lane 1	127	369	497	6.5	582	0.854	100	NA	NA
Lane 2	-	527	527	7.3	617	0.854	100	NA	NA
Lane 3	-	527	527	7.3	617	0.854	100	NA	NA
Approach	127	1424	1552	7.0		0.854			
Total %HV Deg.Satn (v/c)									
Intersection	3729	6.6		0.854					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

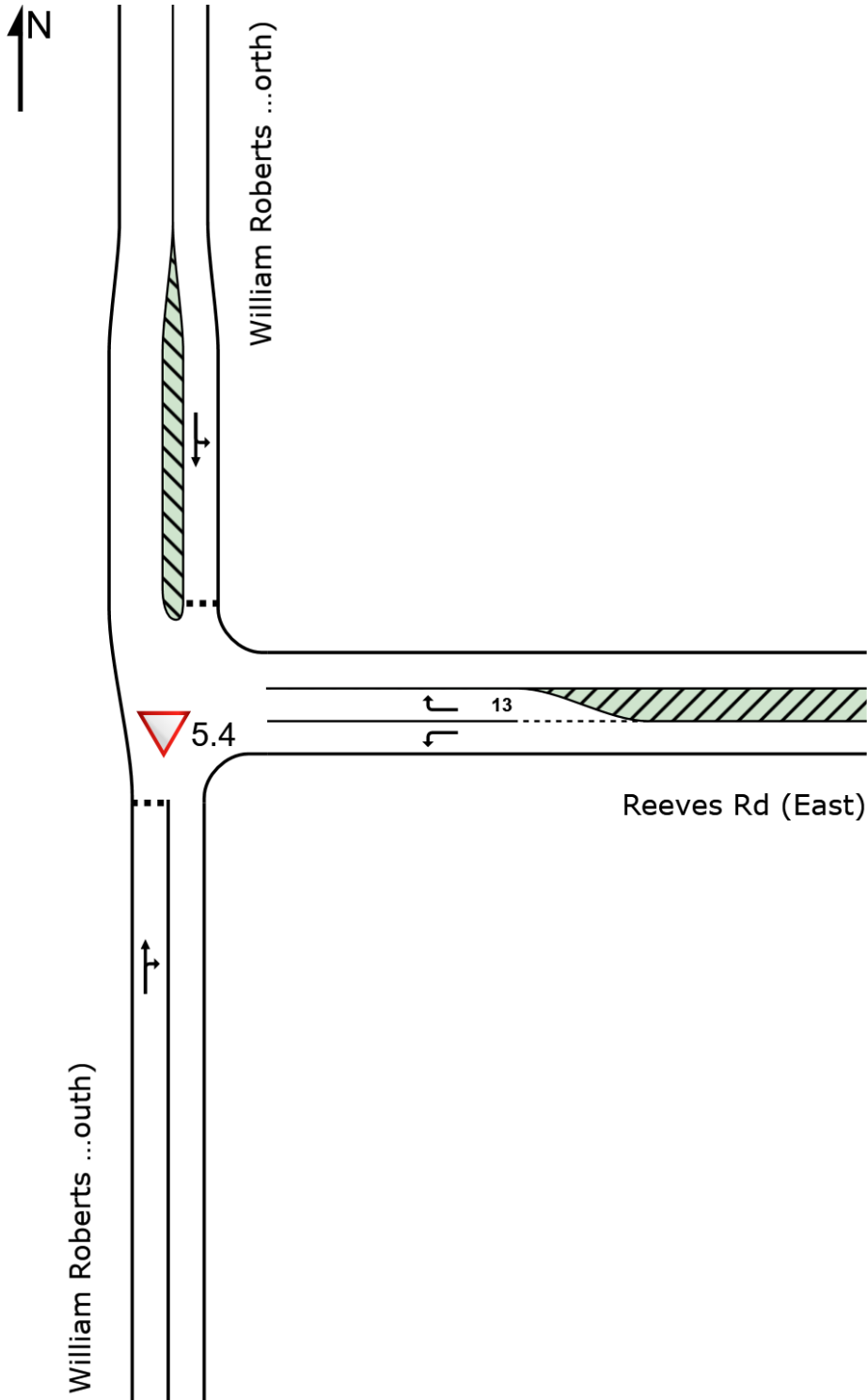
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate % veh/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
East Exit: Pakuranga Road (East)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											
North Exit: Saint Kentigern												
Merge Type: Not Applied												
Full Length Lane	1											
West Exit: Pakuranga Road (West)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											

SITE LAYOUT

▽ Site: 5.4 [5.4 Reeves Rd / William Roberts Rd - Import (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 5.4 [5.4 Reeves Rd / William Roberts Rd - Import (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS [Total HV]		ARRIVAL FLOWS [Total HV]		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE [Veh Dist]		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			m		m	%	%
South: William Roberts Rd (South)															
Lane 1	220	8.2	220	8.2	831	0.265	100	4.2	LOS A	0.8	5.7	Full	243	0.0	0.0
Approach	220	8.2	220	8.2		0.265		4.2	LOS A	0.8	5.7				
East: Reeves Rd (East)															
Lane 1	215	9.3	215	9.3	1714	0.125	100	4.7	LOS A	0.0	0.0	Full	266	0.0	0.0
Lane 2	222	9.0	222	9.0	1718	0.129	100	4.7	LOS A	0.0	0.0	Short	13	0.0	NA
Approach	437	9.2	437	9.2		0.129		4.7	NA	0.0	0.0				
North: William Roberts Rd (North)															
Lane 1	141	5.0	141	5.0	1112	0.126	100	5.7	LOS A	0.3	2.5	Full	244	0.0	0.0
Approach	141	5.0	141	5.0		0.126		5.7	LOS A	0.3	2.5				
Intersection	798	8.2	797 ^{N1}	8.2		0.265		4.7	NA	0.8	5.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Approach Lane Flows (veh/h)										
South: William Roberts Rd (South)										
Mov. From S To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	67	153	220	8.2	831	0.265	100	NA	NA	
Approach	67	153	220	8.2		0.265				
East: Reeves Rd (East)										
Mov. From E To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	215	-	215	9.3	1714	0.125	100	NA	NA	
Lane 2	-	222	222	9.0	1718	0.129	100	0.0	1	
Approach	215	222	437	9.2		0.129				
North: William Roberts Rd (North)										
Mov. From N To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	42	99	141	5.0	1112	0.126	100	NA	NA	
Approach	42	99	141	5.0		0.126				

	Total	%HV	Deg.Satn (v/c)
Intersection	797	8.2	0.265

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: William Roberts Rd (South) Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								
East Exit: Reeves Rd (East) Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								
North Exit: William Roberts Rd (North) Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								

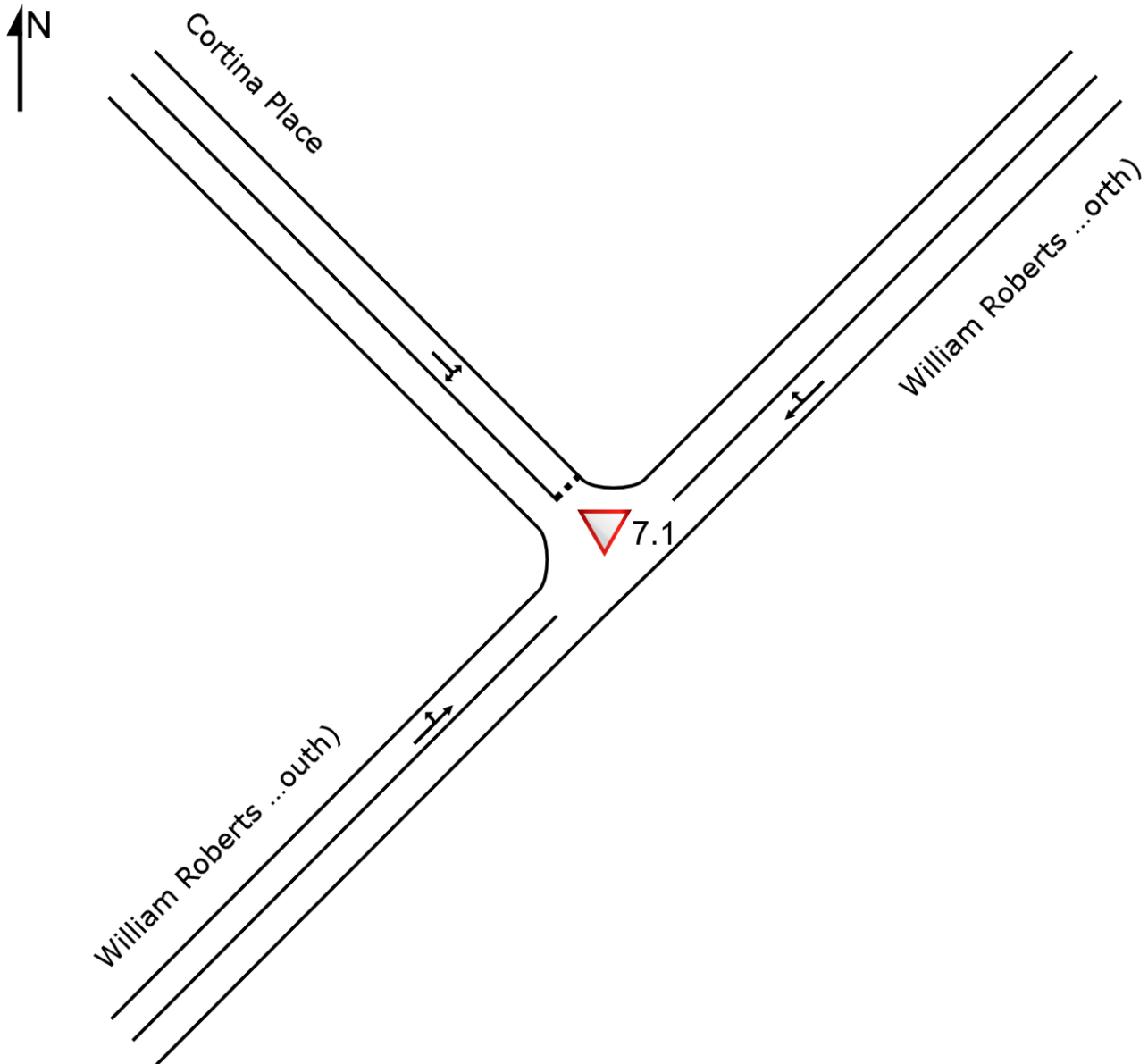
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SITE LAYOUT

▽ Site: 7.1 [7.1 William Roberts Rd / Cortina PI - Import (Site Folder: General)]

Scheme Design
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 7.1 [7.1 William Roberts Rd / Cortina PI - Import (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

Scheme Design
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS [Total HV]		ARRIVAL FLOWS [Total HV]		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE [Veh]	Dist [m]	Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	veh/h	%	veh/h	%	veh/h	v/c	%	sec					m	%	%
NorthEast: William Roberts Road (North)															
Lane 1	293	7.8	293	7.9	1772	0.165	100	0.5	LOS A	0.2	1.6	Full	243	0.0	0.0
Approach	293	7.8	293	7.9		0.165		0.5	NA	0.2	1.6				
NorthWest: Cortina Place															
Lane 1	31	6.5	31	6.5	1051	0.029	100	3.3	LOS A	0.1	0.6	Full	177	0.0	0.0
Approach	31	6.5	31	6.5		0.029		3.3	LOS A	0.1	0.6				
SouthWest: William Roberts Road (South)															
Lane 1	204	8.8	204	8.8	1785	0.114	100	0.2	LOS A	0.0	0.0	Full	110	0.0	0.0
Approach	204	8.8	204	8.8		0.114		0.2	NA	0.0	0.0				
Intersection	528	8.2	527 ^{N1}	8.2		0.165		0.6	NA	0.2	1.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab). Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Approach Lane Flows (veh/h)										
NorthEast: William Roberts Road (North)										
Mov.	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From NE To Exit:	SW	NW			Cap. veh/h	v/c	%	%	No.	
Lane 1	256	37	293	7.9	1772	0.165	100	NA	NA	
Approach	256	37	293	7.9		0.165				
NorthWest: Cortina Place										
Mov.	L2	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From NW To Exit:	NE	SW			Cap. veh/h	v/c	%	%	No.	
Lane 1	20	11	31	6.5	1051	0.029	100	NA	NA	
Approach	20	11	31	6.5		0.029				
SouthWest: William Roberts Road (South)										
Mov.	L2	T1	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	
From SW To Exit:	NW	NE			Cap. veh/h	v/c	%	%	No.	
Lane 1	24	180	204	8.8	1785	0.114	100	NA	NA	
Approach	24	180	204	8.8		0.114				
Total %HV Deg. Satn (v/c)										

Intersection	527	8.2	0.165
--------------	-----	-----	-------

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
NorthEast Exit: William Roberts Road (North) Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
NorthWest Exit: Cortina Place Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
SouthWest Exit: William Roberts Road (South) Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									

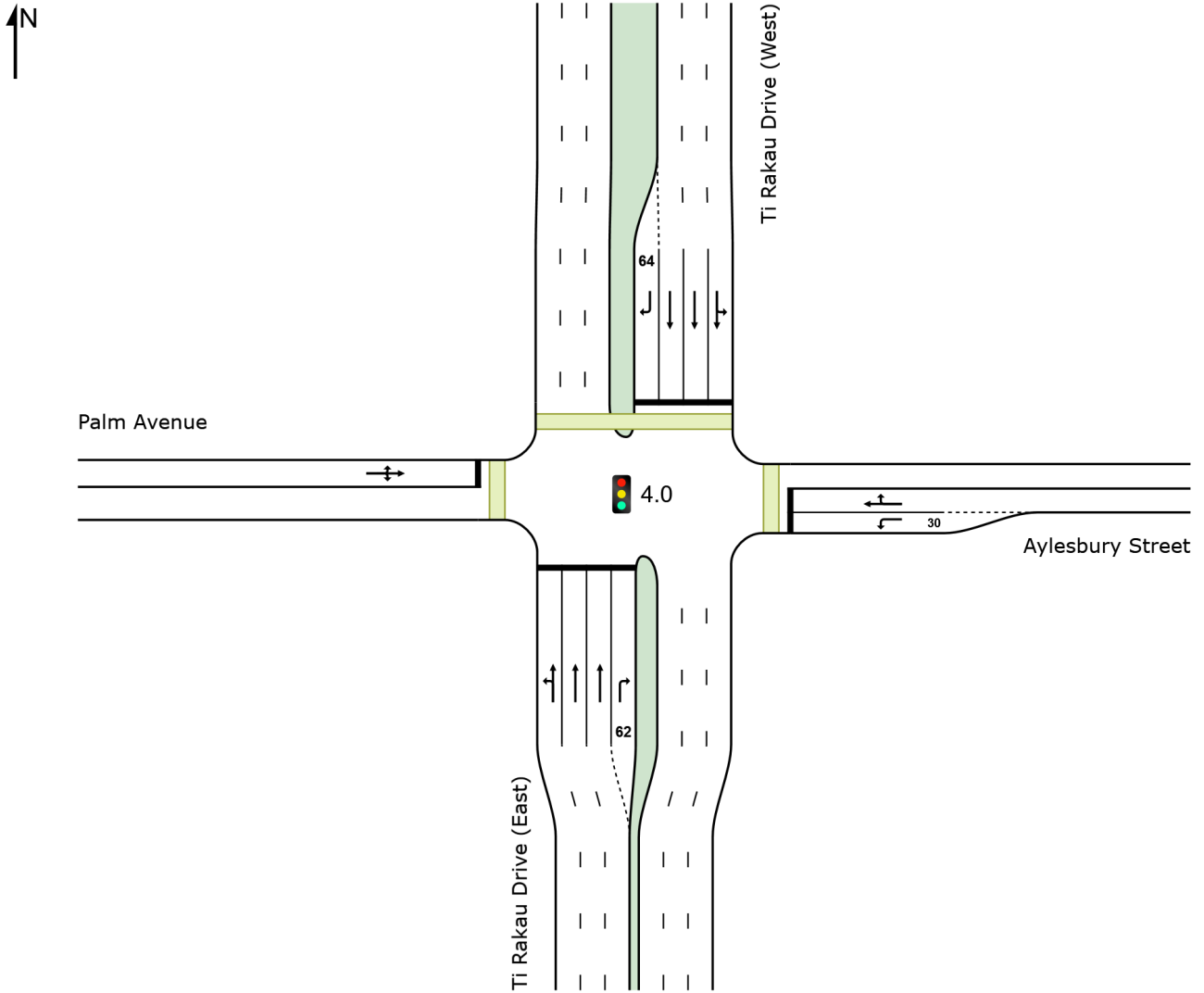
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SITE LAYOUT

Site: 4.0 [4.0 Palm Ave / Aylesbury St - Import (Site Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

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LANE SUMMARY

Site: 4.0 [4.0 Palm Ave / Aylesbury St - Import (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 82 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV %	[Total veh/h	HV %						[Veh	Dist] m				
South: Ti Rakau Drive (East)															
Lane 1	370	7.5	354	7.4	604	0.586	100	28.6	LOS C	10.4	77.1	Full	110	0.0	0.0
Lane 2	382	7.9	365	7.8	623	0.586	100	26.8	LOS C	10.7	80.2	Full	110	0.0	0.0
Lane 3	382	7.9	365	7.8	623	0.586	100	26.8	LOS C	10.7	80.2	Full	110	0.0	0.0
Lane 4	23	4.3	22	4.3	125	0.176	100	44.9	LOS D	0.8	5.8	Short	62	0.0	NA
Approach	1157	7.7	1106 ^{N1}	7.6		0.586		27.7	LOS C	10.7	80.2				
East: Aylesbury Street															
Lane 1	10	0.0	10	0.0	251	0.040	100	18.5	LOS B	0.2	1.3	Short	30	0.0	NA
Lane 2	20	0.0	20	0.0	131	0.152	100	41.9	LOS D	0.7	5.0	Full	40	0.0	0.0
Approach	30	0.0	30	0.0		0.152		34.1	LOS C	0.7	5.0				
North: Ti Rakau Drive (West)															
Lane 1	543	7.8	533	7.9	623	0.856	100	37.8	LOS D	20.9	156.4	Full	174	0.0	5.3
Lane 2	271	7.8	267	7.9	311	0.856	100	44.8	LOS D	11.6	86.4	Full	174	-50.0 ^{N3}	0.0
Lane 3	271	7.8	267	7.9	311	0.856	100	44.8	LOS D	11.6	86.4	Full	174	-50.0 ^{N3}	0.0
Lane 4	21	0.0	21	0.0	129	0.160	100	44.6	LOS D	0.7	5.2	Short	64	0.0	NA
Approach	1107	7.7	1087 ^{N1}	7.7		0.856		41.4	LOS D	20.9	156.4				
West: Palm Avenue															
Lane 1	135	4.4	135	4.4	273	0.494	100	34.7	LOS C	4.4	32.0	Full	87	-31.5 ^{N3}	0.0
Approach	135	4.4	135	4.4		0.494		34.7	LOS C	4.4	32.0				
Intersection	2429	7.4	2358 ^{N1}	7.6		0.856		34.5	LOS C	20.9	156.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

Approach Lane Flows (veh/h)												
South: Ti Rakau Drive (East)												
Mov. From S To Exit:	L2		T1		R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	W	N	N	E								
Lane 1	33	322	-	-	-	354	7.4	604	0.586	100	NA	NA
Lane 2	-	365	-	-	-	365	7.8	623	0.586	100	NA	NA
Lane 3	-	365	-	-	-	365	7.8	623	0.586	100	NA	NA
Lane 4	-	-	22	22	-	22	4.3	125	0.176	100	0.0	3
Approach	33	1052	22	22	-	1106	7.6		0.586			

East: Aylesbury Street										
Mov. From E To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	10	-	-	10	0.0	251	0.040	100	0.0	2
Lane 2	-	10	10	20	0.0	131	0.152	100	NA	NA
Approach	10	10	10	30	0.0		0.152			
North: Ti Rakau Drive (West)										
Mov. From N To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	11	522	-	533	7.9	623	0.856	100	NA	NA
Lane 2	-	267	-	267	7.9	311	0.856	100	NA	NA
Lane 3	-	267	-	267	7.9	311	0.856	100	NA	NA
Lane 4	-	-	21	21	0.0	129	0.160	100	0.0	3
Approach	11	1056	21	1087	7.7		0.856			
West: Palm Avenue										
Mov. From W To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	63	10	62	135	4.4	273	0.494	100	NA	NA
Approach	63	10	62	135	4.4		0.494			
Total %HV Deg. Satn (v/c)										
Intersection	2358	7.6					0.856			

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

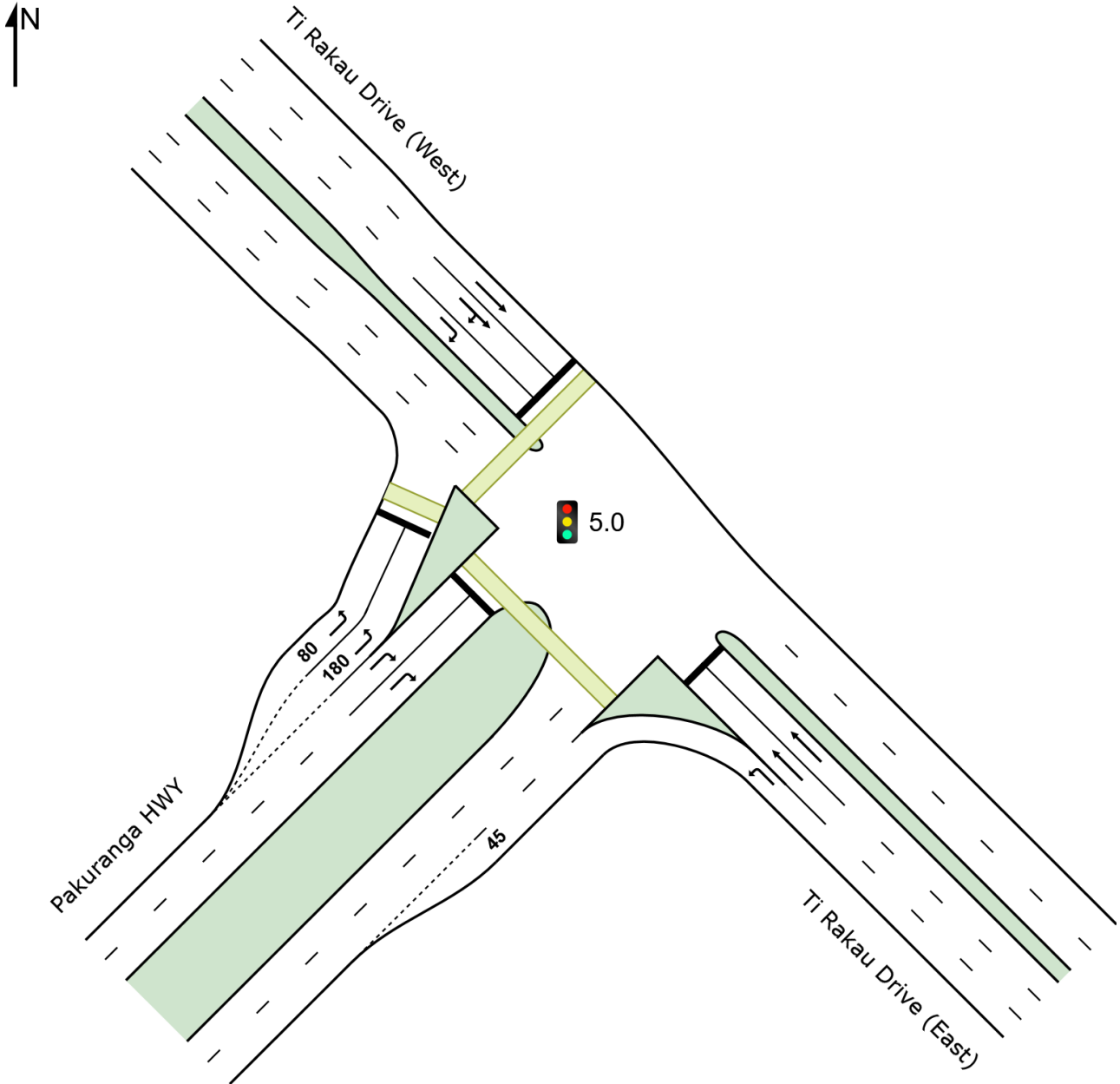
Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate % veh/h	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Ti Rakau Drive (East) Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
Full Length Lane	2										Merge Analysis not applied.
Full Length Lane	3										Merge Analysis not applied.
East Exit: Aylesbury Street Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
North Exit: Ti Rakau Drive (West) Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
Full Length Lane	2										Merge Analysis not applied.
Full Length Lane	3										Merge Analysis not applied.
West Exit: Palm Avenue Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.

SITE LAYOUT

Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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LANE SUMMARY

Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 89 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV %	[Total veh/h	HV %						[Veh	Dist] m				
SouthEast: Ti Rakau Drive (East)															
Lane 1	1572	9.6	1412	9.6	1703	0.829	100	103.3	LOS F	0.0	0.0	Full	91	0.0	0.0
Lane 2	258	11.3	232	11.4	383	0.605	100	35.0	LOS C	8.4	64.3	Full	91	0.0	0.0
Lane 3	256	11.3	231	11.4	381	0.605	100	35.0	LOS C	8.3	64.0	Full	91	0.0	0.0
Approach	2086	10.0	1875 ^{N1}	10.0		0.829		86.4	LOS F	8.4	64.3				
NorthWest: Ti Rakau Drive (West)															
Lane 1	154	24.0	152	24.2	506	0.300	33 ⁵	25.9	LOS C	4.6	38.6	Full	110	0.0	0.0
Lane 2	499	5.2	490	5.2	546	0.898	100	50.4	LOS D	22.0 ^{N4}	160.7 ^{N4}	Full	110	0.0	50.0
Lane 3	486	5.2	478	5.2	532	0.898	100	50.7	LOS D	22.0 ^{N4}	160.7 ^{N4}	Full	110	0.0	50.0
Approach	1139	7.7	1120 ^{N1}	7.8		0.898		47.2	LOS D	22.0	160.7				
SouthWest: Pakuranga HWY															
Lane 1	324	4.9	324	4.9	1146	0.283	100	15.3	LOS B	5.6	40.9	Short	80	0.0	NA
Lane 2	324	4.9	324	4.9	1146	0.283	100	15.3	LOS B	5.6	40.9	Short	180	0.0	NA
Lane 3	429	9.3	429	9.3	487	0.882	100	52.2	LOS D	19.4	146.6	Full	1650	0.0	0.0
Lane 4	434	9.3	434	9.3	492	0.882	100	52.1	LOS D	19.6	147.9	Full	1650	0.0	0.0
Approach	1511	7.4	1511	7.4		0.882		36.3	LOS D	19.6	147.9				
Intersection	4736	8.6	4506 ^{N1}	9.1		0.898		59.9	LOS E	22.0	160.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

⁵ Lane under-utilisation found by the program

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)										
SouthEast: Ti Rakau Drive (East)										
Mov. From SE To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SW	NW								
Lane 1	1412	-	1412	9.6	1703	0.829	100	NA	NA	
Lane 2	-	232	232	11.4	383	0.605	100	NA	NA	
Lane 3	-	231	231	11.4	381	0.605	100	NA	NA	
Approach	1412	463	1875	10.0		0.829				
NorthWest: Ti Rakau Drive (West)										
Mov. From NW To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SE	SW								

Lane 1	152	-	152	24.2	506	0.300	33 ⁵	NA	NA
Lane 2	-	490	490	5.2	546	0.898	100	NA	NA
Lane 3	-	478	478	5.2	532	0.898	100	NA	NA
Approach	152	968	1120	7.8		0.898			
SouthWest: Pakuranga HWY									
Mov. From SW To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	324	-	324	4.9	1146	0.283	100	0.0	2
Lane 2	324	-	324	4.9	1146	0.283	100	0.0	4
Lane 3	-	429	429	9.3	487	0.882	100	NA	NA
Lane 4	-	434	434	9.3	492	0.882	100	NA	NA
Approach	648	863	1511	7.4		0.882			
Total %HV Deg. Satn (v/c)									
Intersection	4506	9.1		0.898					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

5 Lane under-utilisation found by the program

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
SouthEast Exit: Ti Rakau Drive (East) Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
Full Length Lane	2		Merge Analysis not applied.									
NorthWest Exit: Ti Rakau Drive (West) Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
Full Length Lane	2		Merge Analysis not applied.									
Full Length Lane	3		Merge Analysis not applied.									
SouthWest Exit: Pakuranga HWY Merge Type: Priority												
Exit Short Lane	1	45	0.0	490	503	3.00	2.00	1412	1283	1.100	0.8	98.7
Merge Lane	2	-	100.0	Merge Lane is not Opposed			490	1800	0.272	0.0	0.0	

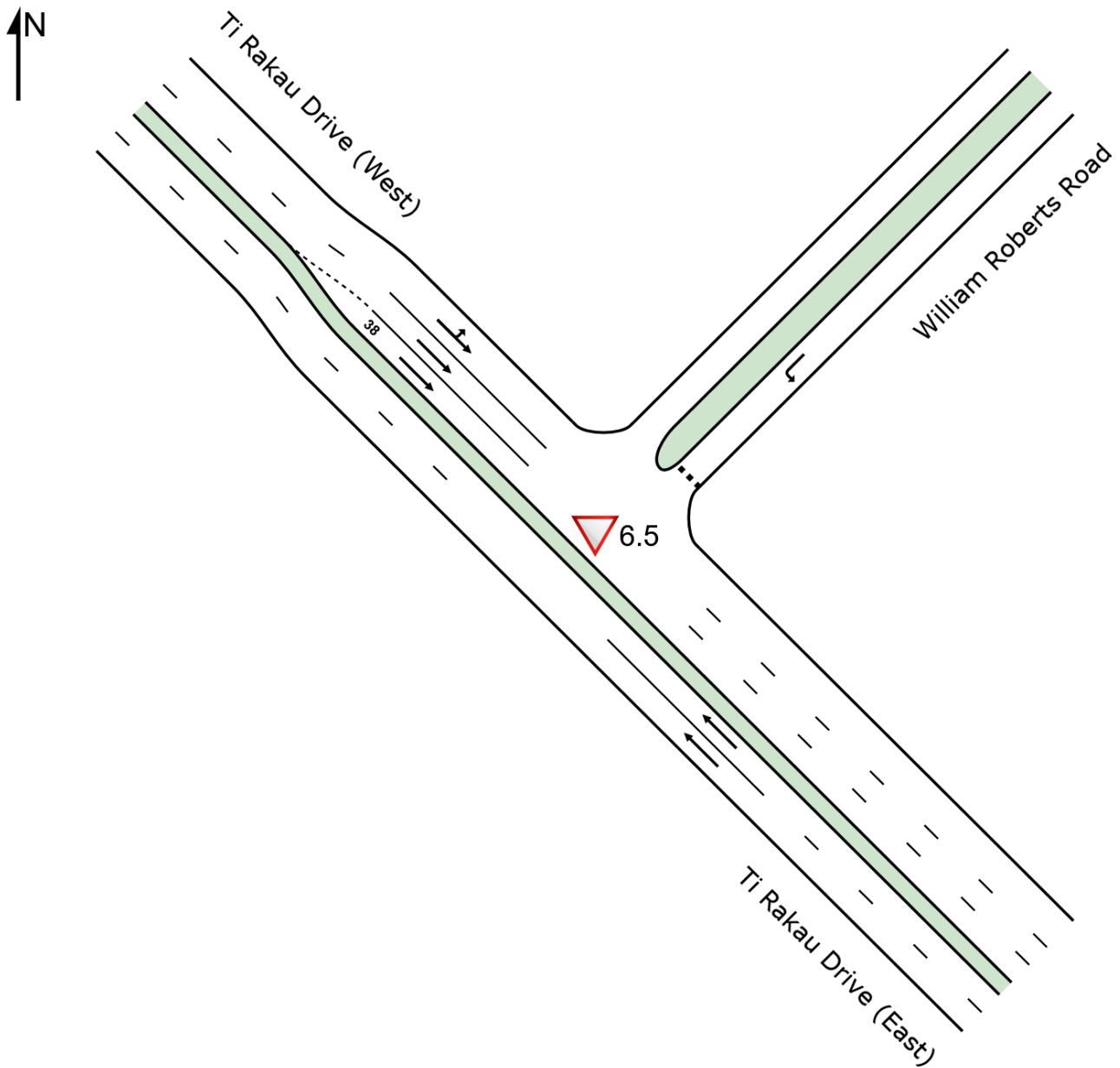
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 Project: C:\Users\jacques.vandenneever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.4\CS 1.4 AM - V1.sip9

SITE LAYOUT

▽ Site: 6.5 [6.5 William Roberts Rd / Ti Rakau Dr - Import (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.4\CS 1.4 AM - V1.sip9

LANE SUMMARY

Site: 6.5 [6.5 William Roberts Rd / Ti Rakau Dr - Import (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV %	[Total veh/h	HV %						[Veh	Dist] m				
SouthEast: Ti Rakau Drive (East)															
Lane 1	990	10.2	882	10.2	1781	0.495	100	0.0	LOS A	0.0	0.0	Full	18	0.0	0.0
Lane 2	979	10.2	872	10.2	1762	0.495	100	0.0	LOS A	0.0	0.0	Full	18	0.0	0.0
Approach	1969	10.2	1754 ^{N1}	10.2		0.495		0.0	NA	0.0	0.0				
NorthEast: William Roberts Road															
Lane 1	263	8.0	263	8.0	553	0.475	100	2.9	LOS A	2.7 ^{N5}	19.8 ^{N5}	Full	110	-50.0 ^{N3}	0.0
Approach	263	8.0	263	8.0		0.475		2.9	LOS A	2.7	19.8				
NorthWest: Ti Rakau Drive (West)															
Lane 1	348	10.2	348	10.2	1827	0.190	100	2.7	LOS A	1.5 ^{N5}	11.1 ^{N5}	Full	97	0.0	0.0
Lane 2	332	12.1	332	12.1	1742	0.190	100	0.0	LOS A	3.7 ^{N5}	28.3 ^{N5}	Full	97	0.0	0.0
Lane 3	332	12.1	332	12.1	1742	0.190	100	0.0	LOS A	0.0	0.0	Short	38	0.0	NA
Approach	1013	11.5	1011 ^{N1}	11.5		0.190		0.9	NA	3.7	28.3				
Intersection	3245	10.4	3028 ^{N1}	11.1		0.495		0.6	NA	3.7	28.3				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

^{N5} Continuous Lane results determined by Back of Queue values of downstream lanes (proportional to lane movement flows).

Approach Lane Flows (veh/h)									
SouthEast: Ti Rakau Drive (East)									
Mov. From SE To Exit:	T1	Total	%HV		Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	NW			Cap. veh/h					
Lane 1	882	882	10.2	1781	0.495	100	NA	NA	
Lane 2	872	872	10.2	1762	0.495	100	NA	NA	
Approach	1754	1754	10.2		0.495				
NorthEast: William Roberts Road									
Mov. From NE To Exit:	L2	Total	%HV		Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SE			Cap. veh/h					
Lane 1	263	263	8.0	553	0.475	100	NA	NA	
Approach	263	263	8.0		0.475				
NorthWest: Ti Rakau Drive (West)									

Mov. From NW To Exit:	L2 NE	T1 SE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	204	144	348	10.2	1827	0.190	100	NA	NA
Lane 2	-	332	332	12.1	1742	0.190	100	NA	NA
Lane 3	-	332	332	12.1	1742	0.190	100	0.0	2
Approach	204	807	1011	11.5		0.190			
Total %HV Deg.Satn (v/c)									
Intersection	3028	11.1		0.495					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

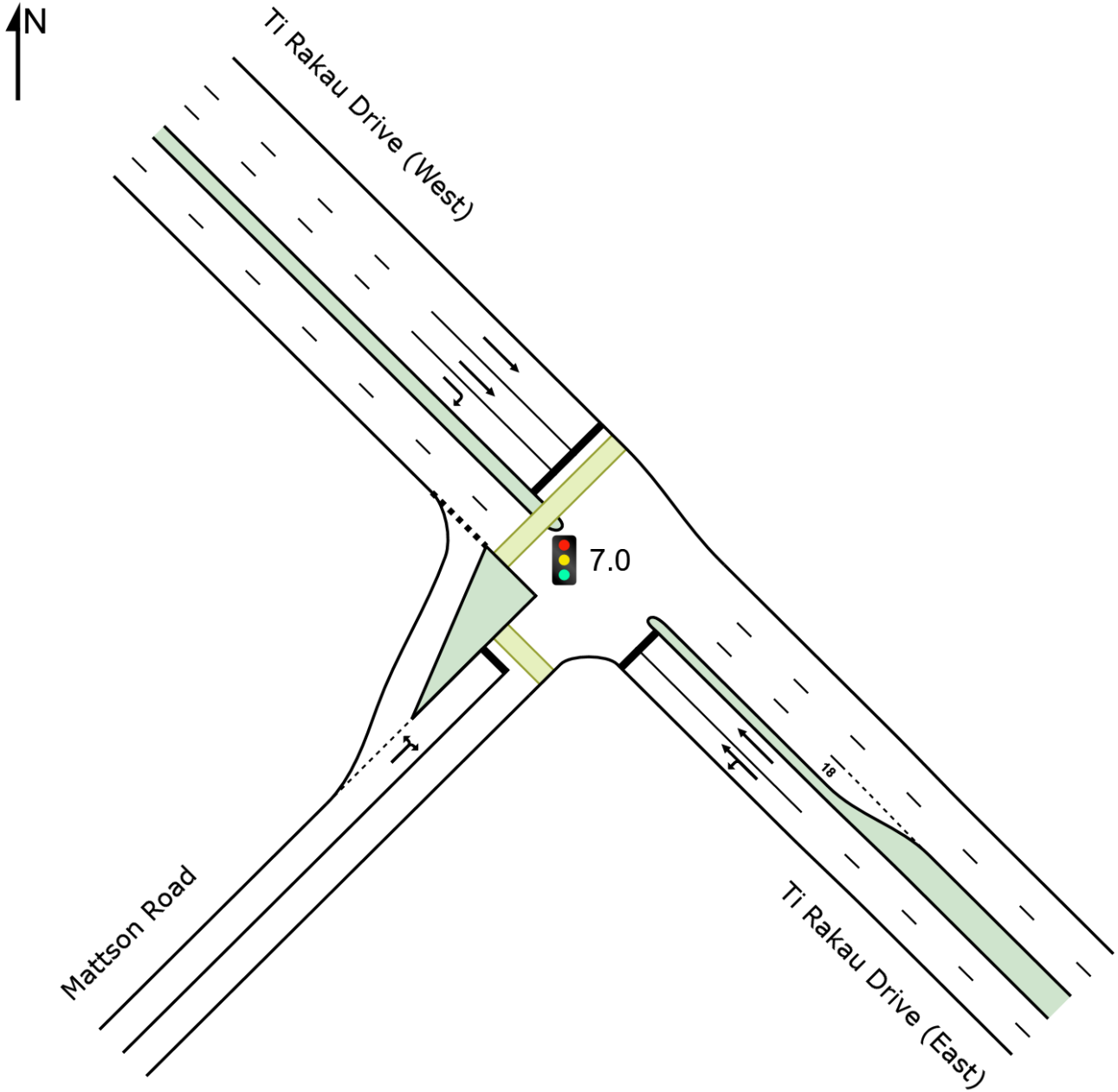
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec		
SouthEast Exit: Ti Rakau Drive (East)												
Merge Type: Not Applied												
Full Length Lane	1										Merge Analysis not applied.	
Full Length Lane	2										Merge Analysis not applied.	
Full Length Lane	3										Merge Analysis not applied.	
NorthEast Exit: William Roberts Road												
Merge Type: Not Applied												
Full Length Lane	1										Merge Analysis not applied.	
NorthWest Exit: Ti Rakau Drive (West)												
Merge Type: Not Applied												
Full Length Lane	1										Merge Analysis not applied.	
Full Length Lane	2										Merge Analysis not applied.	

SITE LAYOUT

Site: 7.0 [7.0 Mattson Rd/ Ti Rakau Dr (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandennee\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.4\CS 1.4 AM - V1.sip9

LANE SUMMARY

Site: 7.0 [7.0 Mattson Rd/ Ti Rakau Dr (Site Folder: General)]

Network: N101 [AM
(Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 81 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
SouthEast: Ti Rakau Drive (East)															
Lane 1	969	10.3	860	10.3	972	0.884	100	28.1	LOS C	33.4	254.2	Full	187	0.0	43.2
Lane 2	976	10.3	865	10.4	978	0.884	100	28.2	LOS C	33.6	255.8	Full	187	0.0	43.8
Approach	1945	10.3	1725 ^N	10.3		0.884		28.1	LOS C	33.6	255.8				
NorthWest: Ti Rakau Drive (West)															
Lane 1	525	11.3	524	11.3	1325	0.396	100	5.2	LOS A	3.4 ^{N4}	26.3 ^{N4}	Full	18	0.0	50.0
Lane 2	494	11.3	493	11.3	1245	0.396	100	5.3	LOS A	3.4 ^{N4}	26.3 ^{N4}	Full	18	0.0	50.0
Lane 3	52	7.7	52	7.7	128	0.406	100	44.1	LOS D	1.9	14.2	Full	18	0.0	0.0
Approach	1071	11.1	1069 ^N	11.1		0.406		7.1	LOS A	3.4	26.3				
SouthWest: Mattson Road															
Lane 1	136	4.4	136	4.4	509	0.267	100	25.3	LOS C	3.9	28.3	Full	282	0.0	0.0
Approach	136	4.4	136	4.4		0.267		25.3	LOS C	3.9	28.3				
Intersection	3152	10.3	2929 ^N	11.1		0.884		20.3	LOS C	33.6	255.8				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)										
SouthEast: Ti Rakau Drive (East)										
Mov.	L2	T1	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From SE To Exit:	SW	NW			veh/h	v/c	%	%		
Lane 1	21	838	860	10.3	972	0.884	100	NA	NA	
Lane 2	-	865	865	10.4	978	0.884	100	NA	NA	
Approach	21	1703	1725	10.3		0.884				
NorthWest: Ti Rakau Drive (West)										
Mov.	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From NW To Exit:	SE	SW			veh/h	v/c	%	%		
Lane 1	524	-	524	11.3	1325	0.396	100	NA	NA	
Lane 2	493	-	493	11.3	1245	0.396	100	NA	NA	
Lane 3	-	52	52	7.7	128	0.406	100	NA	NA	
Approach	1017	52	1069	11.1		0.406				
SouthWest: Mattson Road										
Mov.	L2	R2	Total	%HV	Deg.	Lane Util.	Prob.	Ov.		

From SW To Exit:	NW	SE			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	72	64	136	4.4	509	0.267	100	NA	NA
Approach	72	64	136	4.4		0.267			
Total %HV Deg. Satn (v/c)									
Intersection	2929	11.1		0.884					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East) Merge Type: Priority												
Exit Short Lane	3	18	0.0	493	521	3.00	2.00	64	1265	0.051	0.9	1.1
Merge Lane	2	-	100.0	Merge Lane is not Opposed				493	1800	0.274	0.0	0.0
NorthWest Exit: Ti Rakau Drive (West) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
SouthWest Exit: Mattson Road Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										

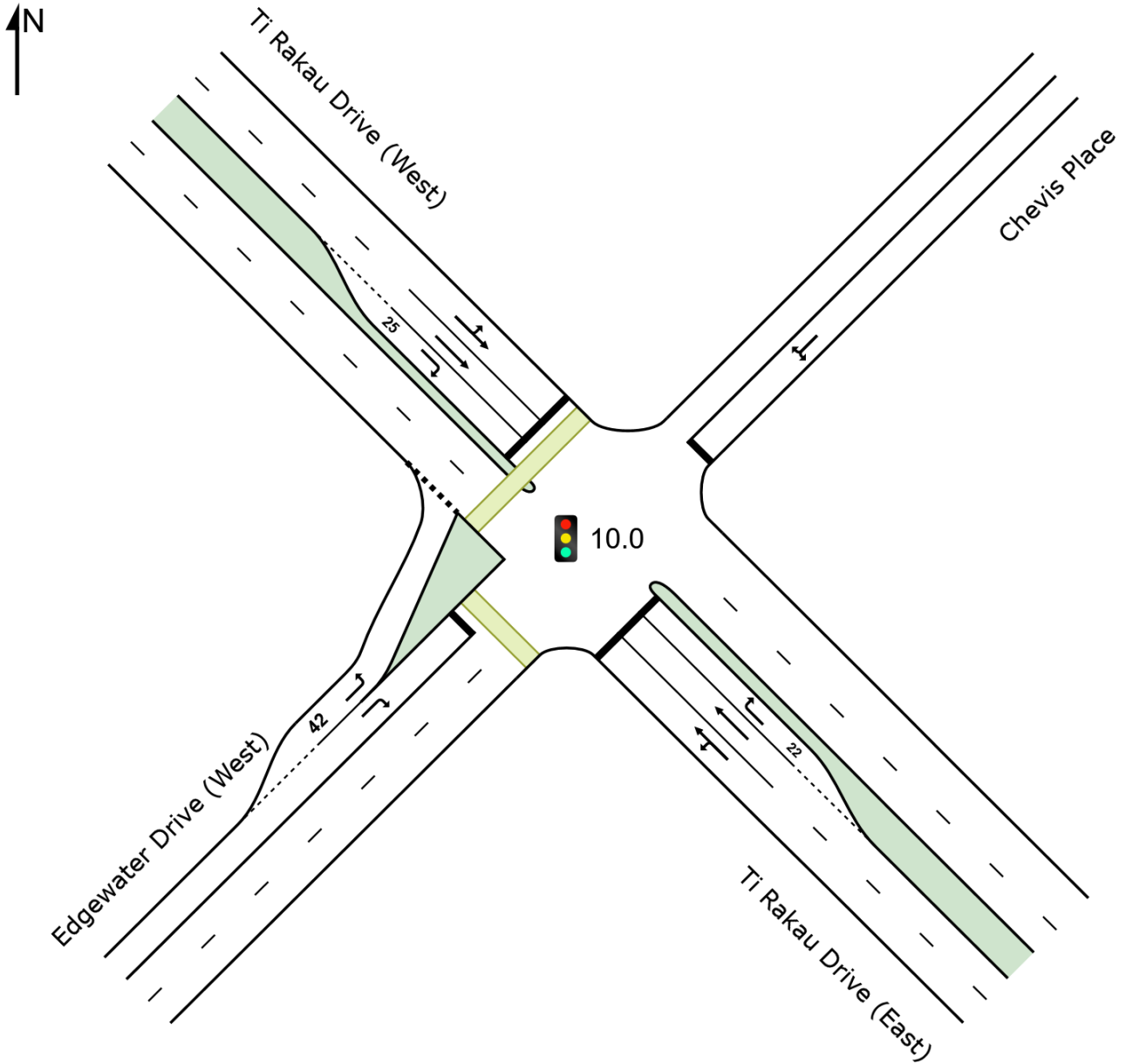
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 Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.4\CS 1.4 AM - V1.sip9

SITE LAYOUT

Site: 10.0 [10.0 Edgewater Dr (West) / Chevis Pl (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 10.0 [10.0 Edgewater Dr (West) / Chevis Pl (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 91 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
SouthEast: Ti Rakau Drive (East)															
Lane 1	949	9.5	881	9.6	991	0.890	100	32.0	LOS C	36.6 ^{N4}	277.6 ^{N4}	Full	190	0.0	50.0
Lane 2	928	10.4	861	10.6	968 ¹	0.890	100	31.3	LOS C	36.4 ^{N4}	277.6 ^{N4}	Full	190	0.0	50.0
Lane 3	10	0.0	9	0.0	117	0.079	100	49.9	LOS D	0.4	2.6	Short	22	0.0	NA
Approach	1887	9.9	1752 ^{N1}	10.0		0.890		31.8	LOS C	36.6	277.6				
NorthEast: Chevis Place															
Lane 1	28	3.6	28	3.6	141	0.198	100	48.6	LOS D	1.1	7.9	Full	138	0.0	0.0
Approach	28	3.6	28	3.6		0.198		48.6	LOS D	1.1	7.9				
NorthWest: Ti Rakau Drive (West)															
Lane 1	478	11.3	460	11.3	1003	0.459	100	13.9	LOS B	11.1	85.5	Full	68	0.0	36.0
Lane 2	382	11.5	368	11.6	801 ¹	0.459	100	13.1	LOS B	8.5	65.3	Full	68	0.0	11.3
Lane 3	77	13.7	74	13.7	108	0.684	100	54.7	LOS D	3.2	25.0	Short	25	0.0	NA
Approach	937	11.6	902 ^{N1}	11.6		0.684		16.9	LOS B	11.1	85.5				
SouthWest: Edgewater Drive (West)															
Lane 1	132	8.0	132	8.0	549	0.240	100	18.6	LOS B	2.9	21.4	Short	42	0.0	NA
Lane 2	59	8.9	59	8.9	115	0.512	100	53.7	LOS D	2.5	18.5	Full	789	0.0	0.0
Approach	191	8.3	191	8.3		0.512		29.5	LOS C	2.9	21.4				
Intersection	3043	10.2	2872 ^{N1}	10.8		0.890		27.1	LOS C	36.6	277.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)											
SouthEast: Ti Rakau Drive (East)											
Mov.	L2	T1	R2	Total	%HV	Cap.	Deg.	Lane	Prob.	Ov.	
From SE						veh/h	Satn	Util.	SL	Ov.	Lane
To Exit:	SW	NW	NE				v/c	%	%	%	No.
Lane 1	134	748	-	881	9.6	991	0.890	100	NA	NA	
Lane 2	-	861	-	861	10.6	968 ¹	0.890	100	NA	NA	
Lane 3	-	-	9	9	0.0	117	0.079	100	0.0	2	
Approach	134	1609	9	1752	10.0		0.890				
NorthEast: Chevis Place											
Mov.	L2	R2	Total	%HV	Deg.	Lane	Prob.	Ov.			
					v/c	Util.	SL	Ov.			

From NE To Exit:	SE	NW				Cap. veh/h	Satn v/c	Util. %	SL %	Ov. %	Lane No.
Lane 1	10	18	28	3.6		141	0.198	100	NA	NA	
Approach	10	18	28	3.6			0.198				
NorthWest: Ti Rakau Drive (West)											
Mov. From NW To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. %	Ov. Lane No.
Lane 1	10	451	-	460	11.3	1003	0.459	100	NA	NA	
Lane 2	-	368	-	368	11.6	801 ¹	0.459	100	NA	NA	
Lane 3	-	-	74	74	13.7	108	0.684	100	15.1		2
Approach	10	818	74	902	11.6		0.684				
SouthWest: Edgewater Drive (West)											
Mov. From SW To Exit:	L2	R2	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. %	Ov. Lane No.
Lane 1	132	-	132	8.0		549	0.240	100	0.0		2
Lane 2	-	59	59	8.9		115	0.512	100	NA	NA	
Approach	132	59	191	8.3			0.512				
Total %HV Deg.Satn (v/c)											
Intersection	2872	10.8		0.890							

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- ¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

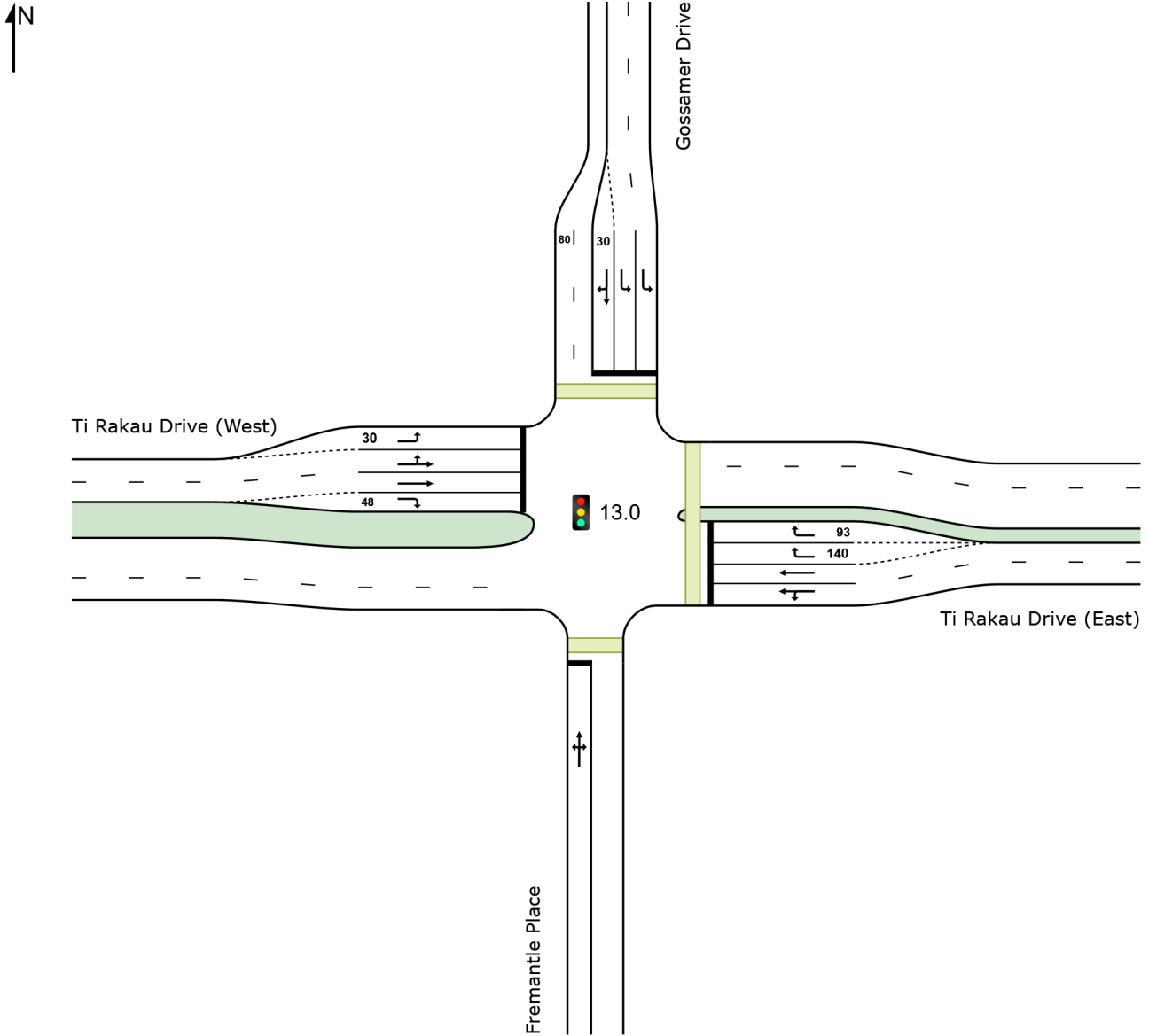
Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East)											
Merge Type: Not Applied											
Full Length Lane	1										
Full Length Lane	2										
NorthEast Exit: Chevis Place											
Merge Type: Not Applied											
Full Length Lane	1										
NorthWest Exit: Ti Rakau Drive (West)											
Merge Type: Not Applied											
Full Length Lane	1										
Full Length Lane	2										
SouthWest Exit: Edgewater Drive (West)											
Merge Type: Not Applied											
Full Length Lane	1										
Full Length Lane	2										

SITE LAYOUT

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: General)]

Scheme Design
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: General)]

Network: N101 [AM (Network Folder: General)]

Scheme Design

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 132 seconds (Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
	veh/h	%	veh/h	%							m				
South: Fremantle Place															
Lane 1	51	7.8	51	7.8	81	0.631	100	76.2	LOS E	3.1	23.5	Full	285	0.0	0.0
Approach	51	7.8	51	7.8		0.631		76.2	LOS E	3.1	23.5				
East: Ti Rakau Drive (East)															
Lane 1	784	10.7	784	10.7	752	1.043	100	97.8	LOS F	59.6	455.7	Full	636	0.0	0.0
Lane 2	730	10.8	730	10.8	700 ¹	1.043	100	120.9	LOS F	69.4	530.9	Full	636	0.0	0.0
Lane 3	128	7.8	128	7.8	328	0.389	47 ⁶	31.2	LOS C	3.4	25.6	Short	140	0.0	NA
Lane 4	271	7.8	271	7.8	328	0.827	100	45.1	LOS D	10.4	77.7	Short	93	0.0	NA
Approach	1913	10.1	1913	10.1		1.043		94.7	LOS F	69.4	530.9				
North: Gossamer Drive															
Lane 1	521	8.9	521	8.9	794	0.656	100	23.1	LOS C	17.3	130.7	Full	1010	0.0	0.0
Lane 2	409	8.9	409	8.9	623 ¹	0.656	100	21.5	LOS C	12.4	93.5	Full	1010	0.0	0.0
Lane 3	291	5.8	291	5.8	230 ¹	1.267	100	315.6	LOS F	42.7	313.8	Short	30	0.0	NA
Approach	1221	8.2	1221	8.2		1.267		92.3	LOS F	42.7	313.8				
West: Ti Rakau Drive (West)															
Lane 1	55	9.1	53	9.1	907	0.058	8 ⁵	14.1	LOS B	1.0	7.6	Short	30	0.0	NA
Lane 2	396	11.4	380	11.5	510 ¹	0.746	100	43.6	LOS D	19.4	149.3	Full	479	0.0	0.0
Lane 3	418	11.4	402	11.5	539 ¹	0.746	100	44.3	LOS D	20.9	160.6	Full	479	0.0	0.0
Lane 4	11	9.1	11	9.1	218	0.049	100	59.4	LOS E	0.5	4.1	Short	48	0.0	NA
Approach	880	11.3	845 ^{N1}	11.3		0.746		42.3	LOS D	20.9	160.6				
Intersection	4065	9.8	4030 ^{N1}	9.9		1.267		82.7	LOS F	69.4	530.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

⁵ Lane under-utilisation found by the program

⁶ Lane under-utilisation due to downstream effects

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)											
South: Fremantle Place											
Mov. From S To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. %	Ov. Lane No.
Lane 1	23	11	17	51	7.8	81	0.631	100	NA	NA	
Approach	23	11	17	51	7.8		0.631				
East: Ti Rakau Drive (East)											

Mov. From E To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	18	766	-	784	10.7	752	1.043	100	NA	NA
Lane 2	-	730	-	730	10.8	700 ¹	1.043	100	NA	NA
Lane 3	-	-	128	128	7.8	328	0.389	47 ⁶	0.0	2
Lane 4	-	-	271	271	7.8	328	0.827	100	0.0	3
Approach	18	1496	399	1913	10.1		1.043			
North: Gossamer Drive										
Mov. From N To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	521	-	-	521	8.9	794	0.656	100	NA	NA
Lane 2	409	-	-	409	8.9	623 ¹	0.656	100	NA	NA
Lane 3	-	11	280	291	5.8	230 ¹	1.267	100	100.0	2
Approach	930	11	280	1221	8.2		1.267			
West: Ti Rakau Drive (West)										
Mov. From W To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	53	-	-	53	9.1	907	0.058	8 ⁵	0.0	2
Lane 2	-	380	-	380	11.5	510 ¹	0.746	100	NA	NA
Lane 3	-	402	-	402	11.5	539 ¹	0.746	100	NA	NA
Lane 4	-	-	11	11	9.1	218	0.049	100	0.0	3
Approach	53	782	11	845	11.3		0.746			
Total %HV Deg. Satn (v/c)										
Intersection	4030	9.9		1.267						

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- 1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
- 5 Lane under-utilisation found by the program
- 6 Lane under-utilisation due to downstream effects

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
South Exit: Fremantle Place Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Ti Rakau Drive (East) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: Gossamer Drive Merge Type: Zipper												
Exit Short Lane	1	80	50.0	141	147	2.50	2.00	181	1630	0.111	0.0	0.1
Merge Lane	2	-	50.0	90	94	2.50	2.00	282	1693	0.167	0.0	0.0
West Exit: Ti Rakau Drive (West) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

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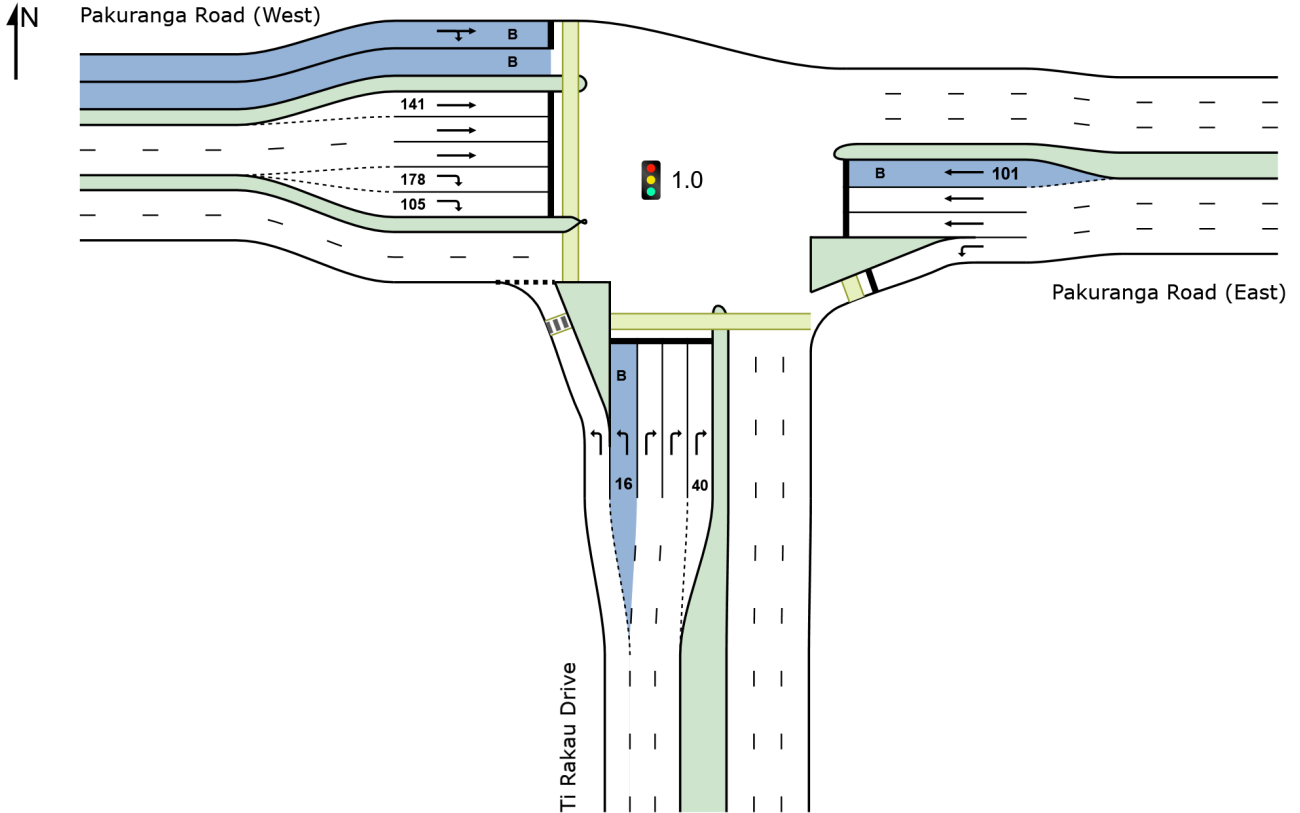
Project: C:\Users\jacques.vandennee\Eastern Busway Alliance\PAA - 05 DESIGN MGMT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.4\CS 1.4 AM - V1.sip9

SITE LAYOUT

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandenhoevever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.4\CS 1.4 PM - V1.sip9

LANE SUMMARY

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 80 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]						[Veh	Dist]				
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			m	m	%	%	
South: Ti Rakau Drive															
Lane 1	767	4.8	754	4.8	1132 ¹	0.666	100	9.4	LOS A	12.2	89.2	Full	174	0.0	0.0
Lane 2 (B)	13	100.0	13	100.0	127	0.102	100	44.7	LOS D	0.5	5.9	Short	16	0.0	NA
Lane 3	385	4.1	378	4.0	427	0.887	100	48.2	LOS D	15.7	114.0	Full	174	0.0	0.0
Lane 4	323	4.1	318	4.0	358 ¹	0.887	100	48.1	LOS D	12.9	93.7	Full	174	0.0	0.0
Lane 5	323	4.1	318	4.0	358 ¹	0.887	100	48.1	LOS D	12.9	93.7	Short	40	0.0	NA
Approach	1811	5.1	1780 ^N	5.0		0.887		31.7	LOS C	15.7	114.0				
East: Pakuranga Road (East)															
Lane 1	787	4.7	766	4.7	983	0.779	100	22.4	LOS C	22.1	160.6	Full	113	0.0	47.4
Lane 2	406	10.2	395	10.2	432	0.913	100	47.9	LOS D	17.3	132.1	Full	113	0.0	29.3
Lane 3	406	10.2	395	10.2	432	0.913	100	47.9	LOS D	17.3	132.1	Full	113	0.0	29.3
Lane 4 (B)	11	100.0	11	100.0	90	0.123	100	42.2	LOS D	0.4	5.1	Short	101	0.0	NA
Approach	1609	8.1	1566 ^N	8.1		0.913		35.4	LOS D	22.1	160.6				
West: Pakuranga Road (West)															
Lane 1 (B)	42	100.0	42	100.0	86	0.490	100	42.0	LOS D	1.5	19.7	Full	388	0.0	0.0
Lane 2	450	7.1	450	7.1	579	0.777	100	30.1	LOS C	15.5	115.0	Short	141	0.0	NA
Lane 3	450	7.1	450	7.1	579	0.777	100	30.1	LOS C	15.5	115.0	Full	388	0.0	0.0
Lane 4	450	7.1	450	7.1	579	0.777	100	30.1	LOS C	15.5	115.0	Full	388	0.0	0.0
Lane 5	228	8.8	228	8.8	261	0.872	100	51.7	LOS D	9.3	70.2	Short	178	0.0	NA
Lane 6	228	8.8	228	8.8	261	0.872	100	51.7	LOS D	9.3	70.2	Short	105	0.0	NA
Approach	1847	9.6	1847	9.6		0.872		35.7	LOS D	15.5	115.0				
Intersection	5267	7.6	5193 ^N	7.7		0.913		34.2	LOS C	22.1	160.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)										
South: Ti Rakau Drive										
Mov. From S To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. %	Ov. Lane No.
	W	E								
Lane 1	754	-	754	4.8	1132 ¹	0.666	100	NA	NA	
Lane 2	13	-	13	100.0	127	0.102	100	0.0	1	
Lane 3	-	378	378	4.0	427	0.887	100	NA	NA	
Lane 4	-	318	318	4.0	358 ¹	0.887	100	NA	NA	

Lane 5	-	318	318	4.0	358 ¹	0.887	100	95.7	4
Approach	767	1013	1780	5.0		0.887			
East: Pakuranga Road (East)									
Mov. From E To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	766	-	766	4.7	983	0.779	100	NA	NA
Lane 2	-	395	395	10.2	432	0.913	100	NA	NA
Lane 3	-	395	395	10.2	432	0.913	100	NA	NA
Lane 4	-	11	11	100.0	90	0.123	100	0.0	3
Approach	766	800	1566	8.1		0.913			
West: Pakuranga Road (West)									
Mov. From W To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	21	21	42	100.0	86	0.490	100	NA	NA
Lane 2	450	-	450	7.1	579	0.777	100	0.0	3
Lane 3	450	-	450	7.1	579	0.777	100	NA	NA
Lane 4	450	-	450	7.1	579	0.777	100	NA	NA
Lane 5	-	228	228	8.8	261	0.872	100	0.0	4
Lane 6	-	228	228	8.8	261	0.872	100	0.0	5
Approach	1371	476	1847	9.6		0.872			
Total %HV Deg. Satn (v/c)									
Intersection	5193	7.7		0.913					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- 1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

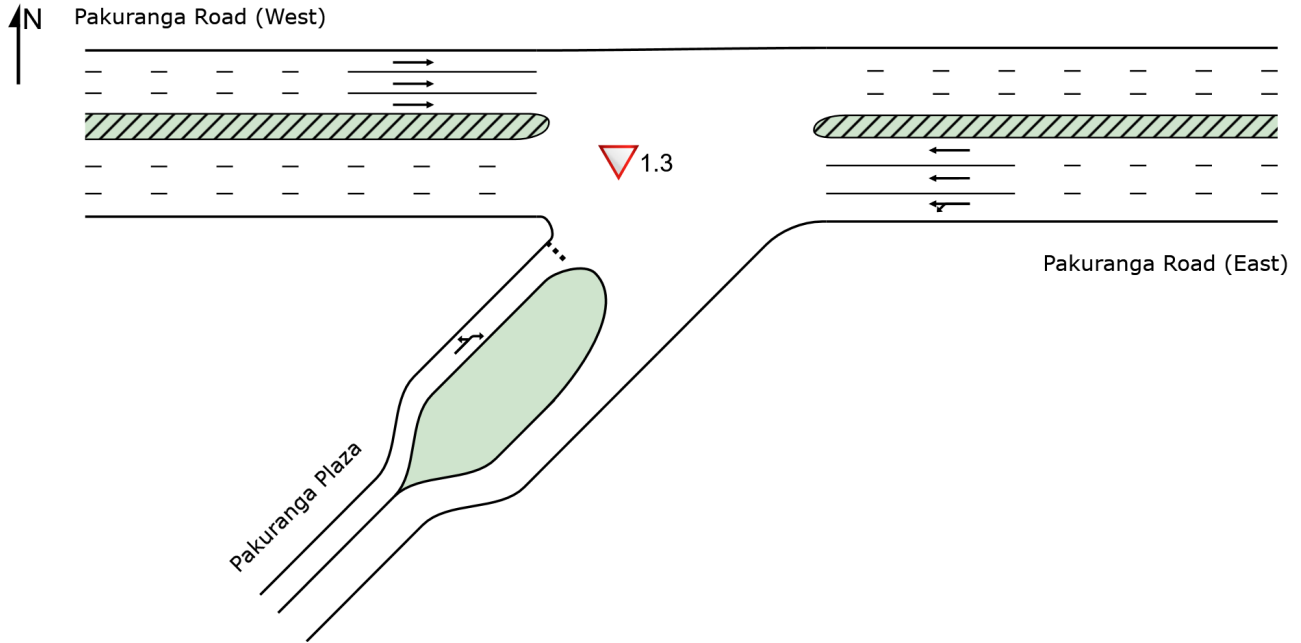
Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Ti Rakau Drive Merge Type: Not Applied											
Full Length Lane	1										
Full Length Lane	2										
Full Length Lane	3										
East Exit: Pakuranga Road (East) Merge Type: Not Applied											
Full Length Lane	1										
Full Length Lane	2										
Full Length Lane	3										
West Exit: Pakuranga Road (West) Merge Type: Not Applied											
Full Length Lane	1										
Full Length Lane	2										
Full Length Lane	3										

SITE LAYOUT

▽ Site: 1.3 [1.3 Mall/ Pakuranga Rd - PD (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandenneever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.4\CS 1.4 PM - V1.sip9

LANE SUMMARY

Site: 1.3 [1.3 Mall/ Pakuranga Rd - PD (Site Folder: General)] Network: N101 [PM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]						[Veh]	[Dist] m				
East: Pakuranga Road (East)															
Lane 1	508	8.7	508	8.7	1846	0.275	100	1.0	LOS A	0.0	0.0	Full	152	0.0	0.0
Lane 2	515	7.3	515	7.3	1872	0.275	100	0.0	LOS A	0.0	0.0	Full	152	0.0	0.0
Lane 3	515	7.3	515	7.3	1872	0.275	100	0.0	LOS A	0.0	0.0	Full	152	0.0	0.0
Approach	1539	7.7	1539	7.7		0.275		0.4	NA	0.0	0.0				
West: Pakuranga Road (West)															
Lane 1	797	6.6	792	6.6	1802	0.439	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Lane 2	797	6.6	792	6.6	1802	0.439	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Lane 3	792	6.6	787	6.6	1792	0.439	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Approach	2386	6.6	2371 ^{N1}	6.6		0.439		0.0	NA	0.0	0.0				
SouthWest: Pakuranga Plaza															
Lane 1	99	7.1	99	7.1	88	1.128	100	318.2	LOS F	12.1	89.8	Full	196	-1.0 ^{N7}	0.0
Approach	99	7.1	99	7.1		1.128		318.2	LOS F	12.1	89.8				
Intersection	4024	7.1	4009 ^{N1}	7.1		1.128		8.0	NA	12.1	89.8				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

N7 The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)										
East: Pakuranga Road (East)										
Mov. From E To Exit:	L1	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SW	W								
Lane 1	94	414	508	8.7	1846	0.275	100	NA	NA	
Lane 2	-	515	515	7.3	1872	0.275	100	NA	NA	
Lane 3	-	515	515	7.3	1872	0.275	100	NA	NA	
Approach	94	1445	1539	7.7		0.275				
West: Pakuranga Road (West)										
Mov. From W To Exit:	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.		
	E									
Lane 1	792	792	6.6	1802	0.439	100	NA	NA		
Lane 2	792	792	6.6	1802	0.439	100	NA	NA		

Lane 3	787	787	6.6		1792	0.439	100	NA	NA
Approach	2371	2371	6.6			0.439			
SouthWest: Pakuranga Plaza									
Mov. From SW To Exit:	L3 W	R1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.
Lane 1	98	1	99	7.1	88	1.128	100	NA	NA
Approach	98	1	99	7.1		1.128			
Total %HV Deg. Satn (v/c)									
Intersection	4009	7.1		1.128					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

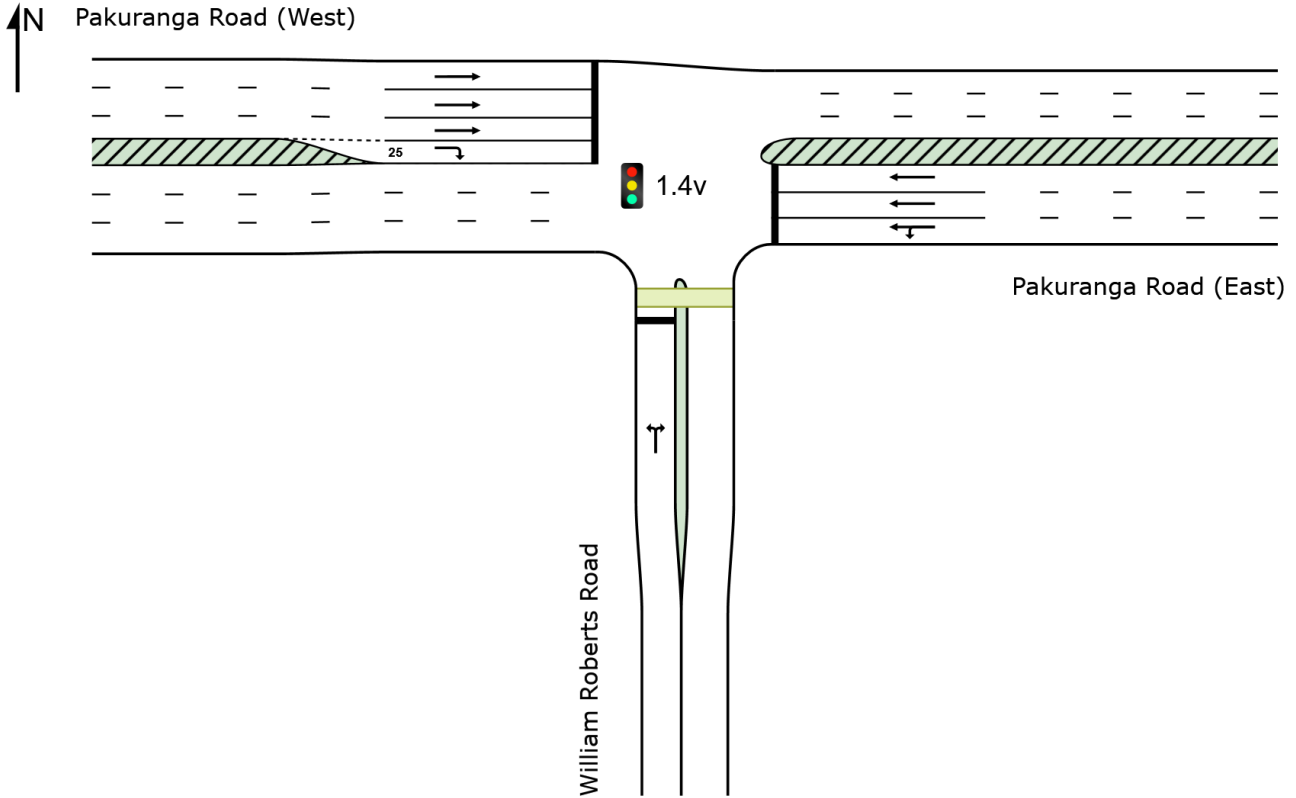
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: Pakuranga Road (East)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.
Full Length Lane	3											Merge Analysis not applied.
West Exit: Pakuranga Road (West)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.
Full Length Lane	3											Merge Analysis not applied.
SouthWest Exit: Pakuranga Plaza												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.

SITE LAYOUT

 Site: 1.4v [1.4 William Roberts/ Pakuranga Rd - PD - Conversion (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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LANE SUMMARY

Site: 1.4v [1.4 William Roberts/ Pakuranga Rd - PD - Conversion (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS [Total HV] veh/h %		ARRIVAL FLOWS [Total HV] veh/h %		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE [Veh Dist] m		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
					veh/h	v/c	%	sec					m	%	%
South: William Roberts Road															
Lane 1	236	7.2	235	7.2	265	0.888	100	84.0	LOS F	17.6	130.7	Full	244	-28.7 ^{N7}	0.0
Approach	236	7.2	235 ^{N1}	7.2		0.888		84.0	LOS F	17.6	130.7				
East: Pakuranga Road (East)															
Lane 1	490	7.3	490	7.3	1102	0.444	100	12.9	LOS B	11.7	87.3	Full	184	0.0	0.0
Lane 2	488	7.6	488	7.6	1098	0.444	100	15.7	LOS B	14.4	107.1	Full	184	0.0	0.0
Lane 3	493	7.6	493	7.6	1110	0.444	100	15.6	LOS B	14.5	107.9	Full	184	0.0	0.0
Approach	1471	7.5	1471	7.5		0.444		14.7	LOS B	14.5	107.9				
West: Pakuranga Road (West)															
Lane 1	1187	6.5	1186	6.5	1333	0.890	100	17.2	LOS B	30.0 ^{N4}	222.1 ^{N4}	Full	152	0.0	50.0
Lane 2	725	6.5	725	6.5	814	0.890	100	31.6	LOS C	30.0 ^{N4}	222.1 ^{N4}	Full	152	-38.9 ^{N3}	50.0
Lane 3	549	6.5	549	6.5	616 ¹	0.890	100	38.1	LOS D	30.0 ^{N4}	222.1 ^{N4}	Full	152	-50.0 ^{N3}	50.0
Lane 4	54	13.0	54	13.0	119	0.452	100	80.8	LOS F	3.6	27.6	Short	25	0.0	NA
Approach	2515	6.7	2514 ^{N1}	6.7		0.890		27.3	LOS C	30.0	222.1				
Intersection	4222	7.0	4220 ^{N1}	7.0		0.890		26.1	LOS C	30.0	222.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

^{N4} Average back of queue has been restricted to the available queue storage space.

^{N7} The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)										
South: William Roberts Road										
Mov.	L2	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane No.	
From S To Exit:	W	E			veh/h	v/c	%	%		
Lane 1	141	95	235	7.2	265	0.888	100	NA	NA	
Approach	141	95	235	7.2		0.888				
East: Pakuranga Road (East)										
Mov.	L2	T1	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane No.	
From E To Exit:	S	W			veh/h	v/c	%	%		
Lane 1	73	417	490	7.3	1102	0.444	100	NA	NA	
Lane 2	-	488	488	7.6	1098	0.444	100	NA	NA	

Lane 3	-	493	493	7.6	1110	0.444	100	NA	NA
Approach	73	1398	1471	7.5		0.444			
West: Pakuranga Road (West)									
Mov. From W To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	E	S							
Lane 1	1186	-	1186	6.5	1333	0.890	100	NA	NA
Lane 2	725	-	725	6.5	814	0.890	100	NA	NA
Lane 3	549	-	549	6.5	616 ¹	0.890	100	NA	NA
Lane 4	-	54	54	13.0	119	0.452	100	24.1	3
Approach	2460	54	2514	6.7		0.890			
Total %HV Deg. Satn (v/c)									
Intersection	4220	7.0		0.890					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- ¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

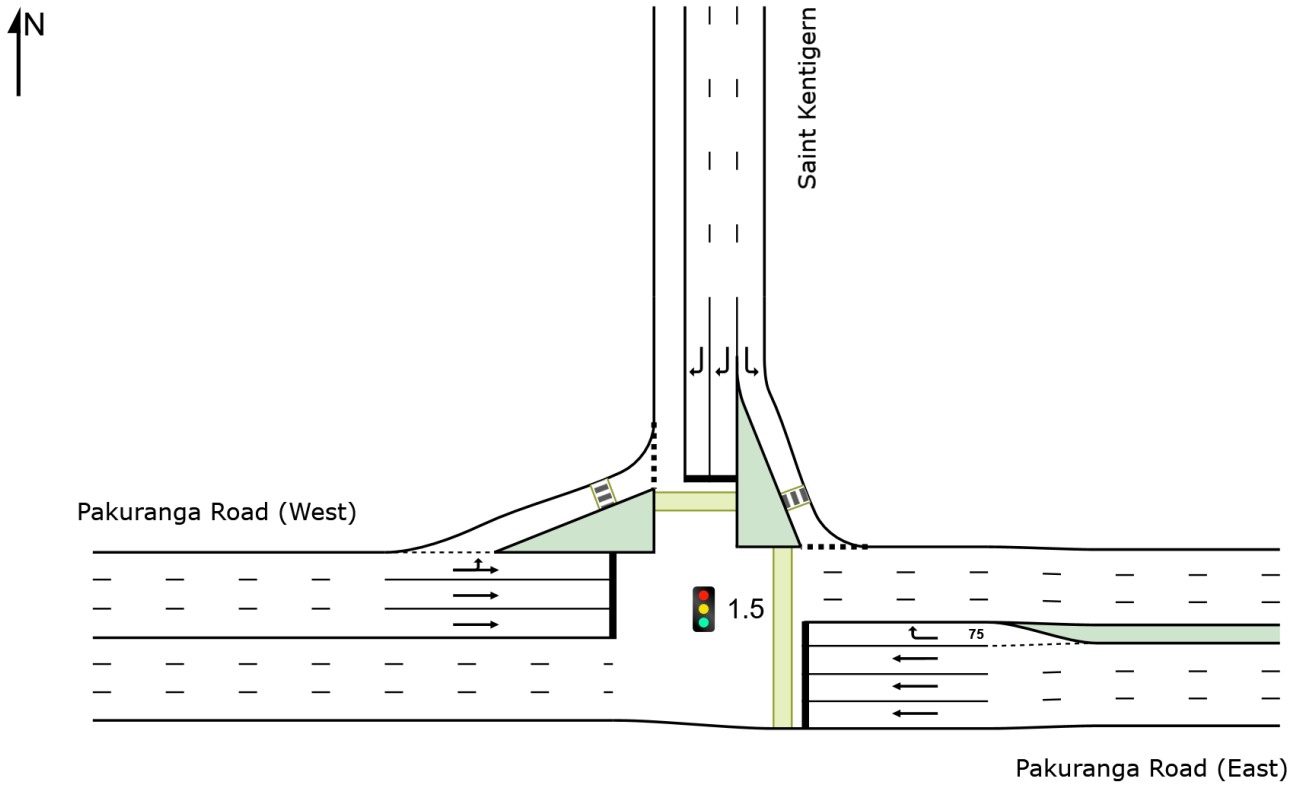
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate % veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
South Exit: William Roberts Road												
Merge Type: Not Applied												
Full Length Lane	1											
East Exit: Pakuranga Road (East)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											
West Exit: Pakuranga Road (West)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											

SITE LAYOUT

Site: 1.5 [1.5 Saint Kentigern/ Pakuranga Rd - PD (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.4\CS 1.4 PM - V1.sip9

LANE SUMMARY

Site: 1.5 [1.5 Saint Kentigern/ Pakuranga Rd - PD (Site Folder: Network: N101 [PM (Network General)] Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS [Total HV] veh/h %		ARRIVAL FLOWS [Total HV] veh/h %		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh Dist] m		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
East: Pakuranga Road (East)															
Lane 1	458	7.6	458	7.6	1415	0.323	100	5.4	LOS A	8.8	65.6	Full	87	0.0	0.0
Lane 2	458	7.6	458	7.6	1415	0.323	100	5.4	LOS A	8.8	65.6	Full	87	0.0	0.0
Lane 3	460	7.6	460	7.6	1422	0.323	100	5.4	LOS A	8.8	65.9	Full	87	0.0	0.0
Lane 4	27	3.7	27	3.7	139	0.194	100	52.6	LOS D	1.3	9.7	Short	75	0.0	NA
Approach	1402	7.5	1402	7.5		0.323		6.3	LOS A	8.8	65.9				
North: Saint Kentigern															
Lane 1	57	3.5	57	3.5	544	0.105	100	14.6	LOS B	1.7	12.1	Full	96	0.0	0.0
Lane 2	47	7.5	47	7.5	254	0.184	100	60.9	LOS E	2.7	20.2	Full	96	0.0	0.0
Lane 3	46	7.5	46	7.5	250	0.184	100	61.0	LOS E	2.7	19.9	Full	96	0.0	0.0
Approach	150	6.0	150	6.0		0.184		43.3	LOS D	2.7	20.2				
West: Pakuranga Road (West)															
Lane 1	603	6.2	603	6.2	701	0.860	100	14.9	LOS B	18.1	133.5	Full	184	0.0	0.0
Lane 2	982	6.5	982	6.5	1142	0.860	100	9.5	LOS A	32.3	238.8	Full	184	0.0	38.9
Lane 3	982	6.5	982	6.5	1142	0.860	100	15.8	LOS B	36.4 ^{N4}	268.9 ^{N4}	Full	184	0.0	50.0
Approach	2568	6.4	2568	6.4		0.860		13.2	LOS B	36.4	268.9				
Intersection	4120	6.8	4120	6.8		0.860		11.9	LOS B	36.4	268.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)										
East: Pakuranga Road (East)										
Mov. From E To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.	
	W	N								
Lane 1	458	-	458	7.6	1415	0.323	100	NA	NA	
Lane 2	458	-	458	7.6	1415	0.323	100	NA	NA	
Lane 3	460	-	460	7.6	1422	0.323	100	NA	NA	
Lane 4	-	27	27	3.7	139	0.194	100	0.0	3	
Approach	1375	27	1402	7.5		0.323				
North: Saint Kentigern										
Mov. From N To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.	
	E	W								
Lane 1	57	-	57	3.5	544	0.105	100	NA	NA	
Lane 2	-	47	47	7.5	254	0.184	100	NA	NA	

Lane 3	-	46	46	7.5	250	0.184	100	NA	NA
Approach	57	93	150	6.0		0.184			
West: Pakuranga Road (West)									
Mov. From W To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	N	E							
Lane 1	54	549	603	6.2	701	0.860	100	NA	NA
Lane 2	-	982	982	6.5	1142	0.860	100	NA	NA
Lane 3	-	982	982	6.5	1142	0.860	100	NA	NA
Approach	54	2514	2568	6.4		0.860			
Total %HV Deg. Satn (v/c)									
Intersection	4120	6.8		0.860					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

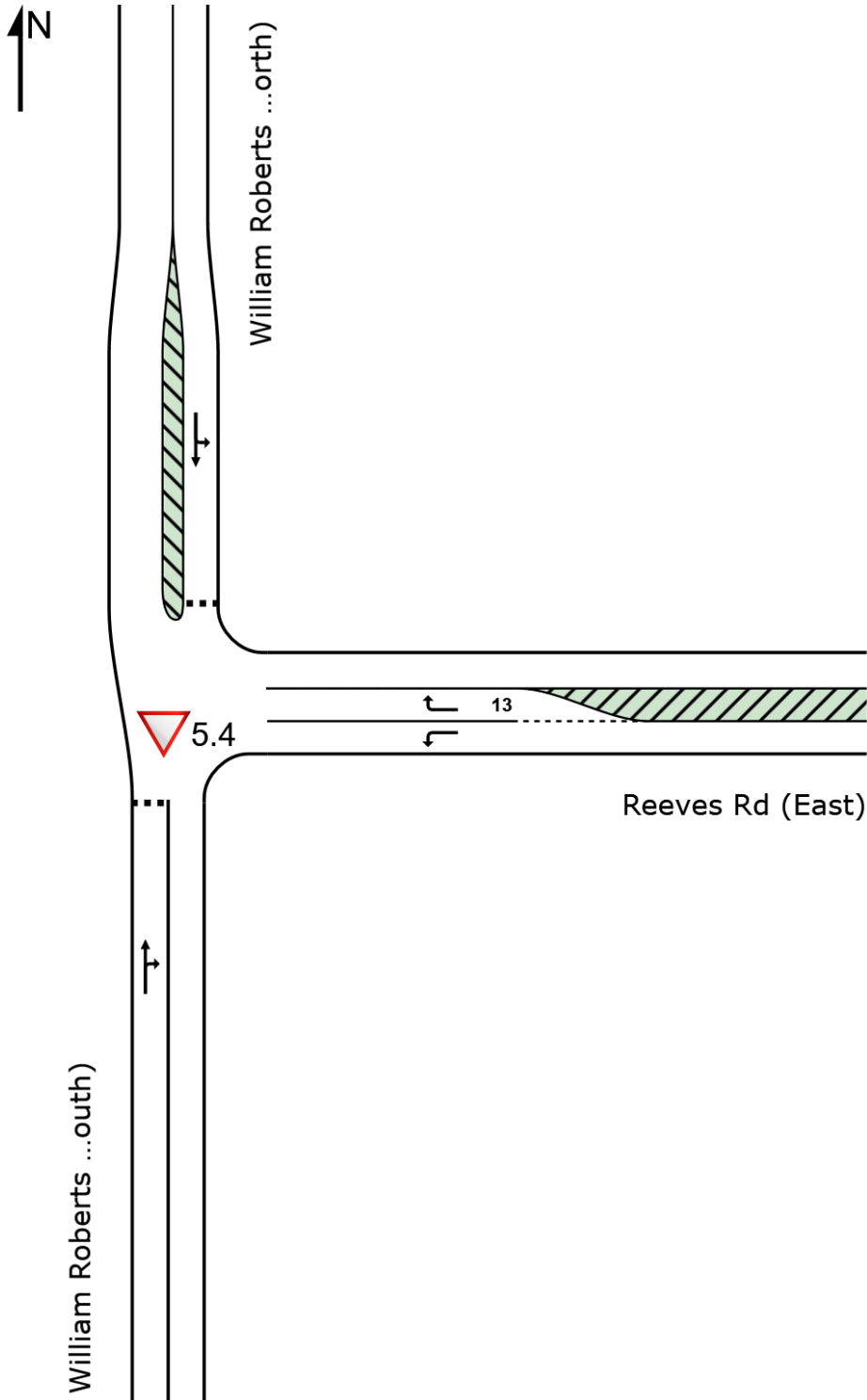
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
East Exit: Pakuranga Road (East)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											
North Exit: Saint Kentigern												
Merge Type: Not Applied												
Full Length Lane	1											
West Exit: Pakuranga Road (West)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											

SITE LAYOUT

▽ Site: 5.4 [5.4 Reeves Rd / William Roberts Rd - Import (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 5.4 [5.4 Reeves Rd / William Roberts Rd - Import (Site Folder: General)] Network: N101 [PM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
South: William Roberts Rd (South)															
Lane 1	315	8.0	314	8.0	1139	0.276	100	2.2	LOS A	0.9	6.4	Full	243	0.0	0.0
Approach	315	8.0	314 ^{N1}	8.0		0.276		2.2	LOS A	0.9	6.4				
East: Reeves Rd (East)															
Lane 1	57	8.8	57	8.8	1721	0.033	100	4.6	LOS A	0.0	0.0	Full	266	0.0	0.0
Lane 2	76	15.8	76	15.8	1643	0.046	100	4.7	LOS A	0.0	0.0	Short	13	0.0	NA
Approach	133	12.8	133	12.8		0.046		4.7	NA	0.0	0.0				
North: William Roberts Rd (North)															
Lane 1	80	5.0	80	5.0	1296	0.062	100	4.3	LOS A	0.1	1.1	Full	244	0.0	0.0
Approach	80	5.0	80	5.0		0.062		4.3	LOS A	0.1	1.1				
Intersection	528	8.7	527 ^{N1}	8.8		0.276		3.2	NA	0.9	6.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
 Lane LOS values are based on average delay per lane.
 Minor Road Approach LOS values are based on average delay for all lanes.
 NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)										
South: William Roberts Rd (South)										
Mov. From S To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	160	154	314	8.0	1139	0.276	100	NA	NA	
Approach	160	154	314	8.0		0.276				
East: Reeves Rd (East)										
Mov. From E To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	57	-	57	8.8	1721	0.033	100	NA	NA	
Lane 2	-	76	76	15.8	1643	0.046	100	0.0	1	
Approach	57	76	133	12.8		0.046				
North: William Roberts Rd (North)										
Mov. From N To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	12	68	80	5.0	1296	0.062	100	NA	NA	

Approach	12	68	80	5.0	0.062
Total %HV Deg.Satn (v/c)					
Intersection	527	8.8	0.276		

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: William Roberts Rd (South)											
Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								
East Exit: Reeves Rd (East)											
Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								
North Exit: William Roberts Rd (North)											
Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								

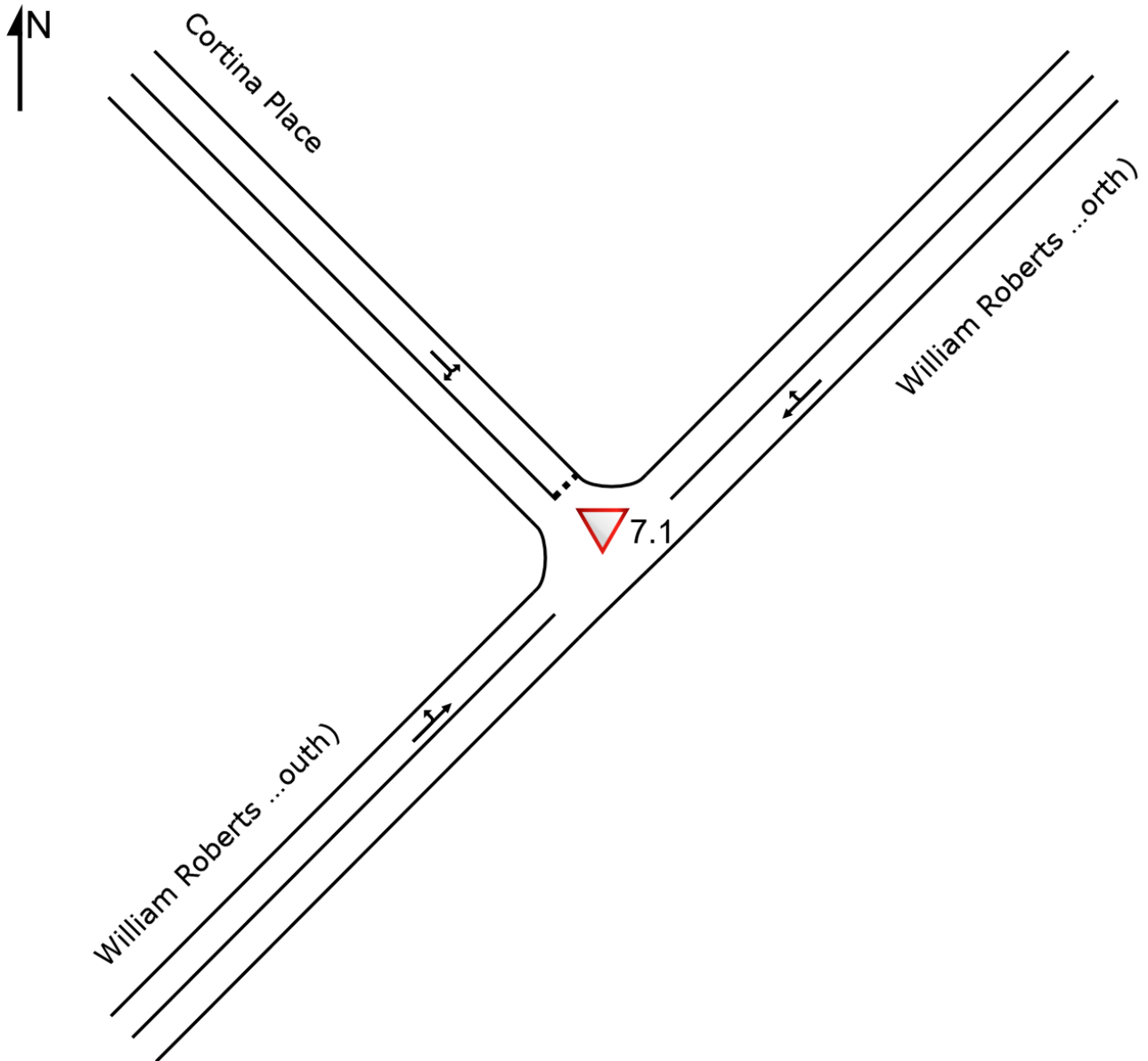
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SITE LAYOUT

▽ Site: 7.1 [7.1 William Roberts Rd / Cortina PI - Import (Site Folder: General)]

Scheme Design
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 7.1 [7.1 William Roberts Rd / Cortina PI - Import (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

Scheme Design
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS [Total HV] veh/h %		ARRIVAL FLOWS [Total HV] veh/h %		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %	
NorthEast: William Roberts Road (North)															
Lane 1	116	5.2	116	5.2	1703	0.068	100	1.0	LOS A	0.1	1.0	Full	243	0.0	0.0
Approach	116	5.2	116	5.2		0.068		1.0	NA	0.1	1.0				
NorthWest: Cortina Place															
Lane 1	64	6.3	64	6.3	1112	0.058	100	3.2	LOS A	0.2	1.1	Full	177	0.0	0.0
Approach	64	6.3	64	6.3		0.058		3.2	LOS A	0.2	1.1				
SouthWest: William Roberts Road (South)															
Lane 1	276	8.4	275	8.4	1791	0.153	100	0.2	LOS A	0.0	0.0	Full	110	0.0	0.0
Approach	276	8.4	275 ^{N1}	8.4		0.153		0.2	NA	0.0	0.0				
Intersection	456	7.3	455 ^{N1}	7.3		0.153		0.8	NA	0.2	1.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab). Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)										
NorthEast: William Roberts Road (North)										
Mov. From NE To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SW	NW								
Lane 1	91	25	116	5.2	1703	0.068	100	NA	NA	
Approach	91	25	116	5.2		0.068				
NorthWest: Cortina Place										
Mov. From NW To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	NE	SW								
Lane 1	45	19	64	6.3	1112	0.058	100	NA	NA	
Approach	45	19	64	6.3		0.058				
SouthWest: William Roberts Road (South)										
Mov. From SW To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	NW	NE								
Lane 1	29	246	275	8.4	1791	0.153	100	NA	NA	
Approach	29	246	275	8.4		0.153				
Total %HV Deg. Satn (v/c)										

Intersection	455	7.3	0.153
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Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
NorthEast Exit: William Roberts Road (North) Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
NorthWest Exit: Cortina Place Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
SouthWest Exit: William Roberts Road (South) Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									

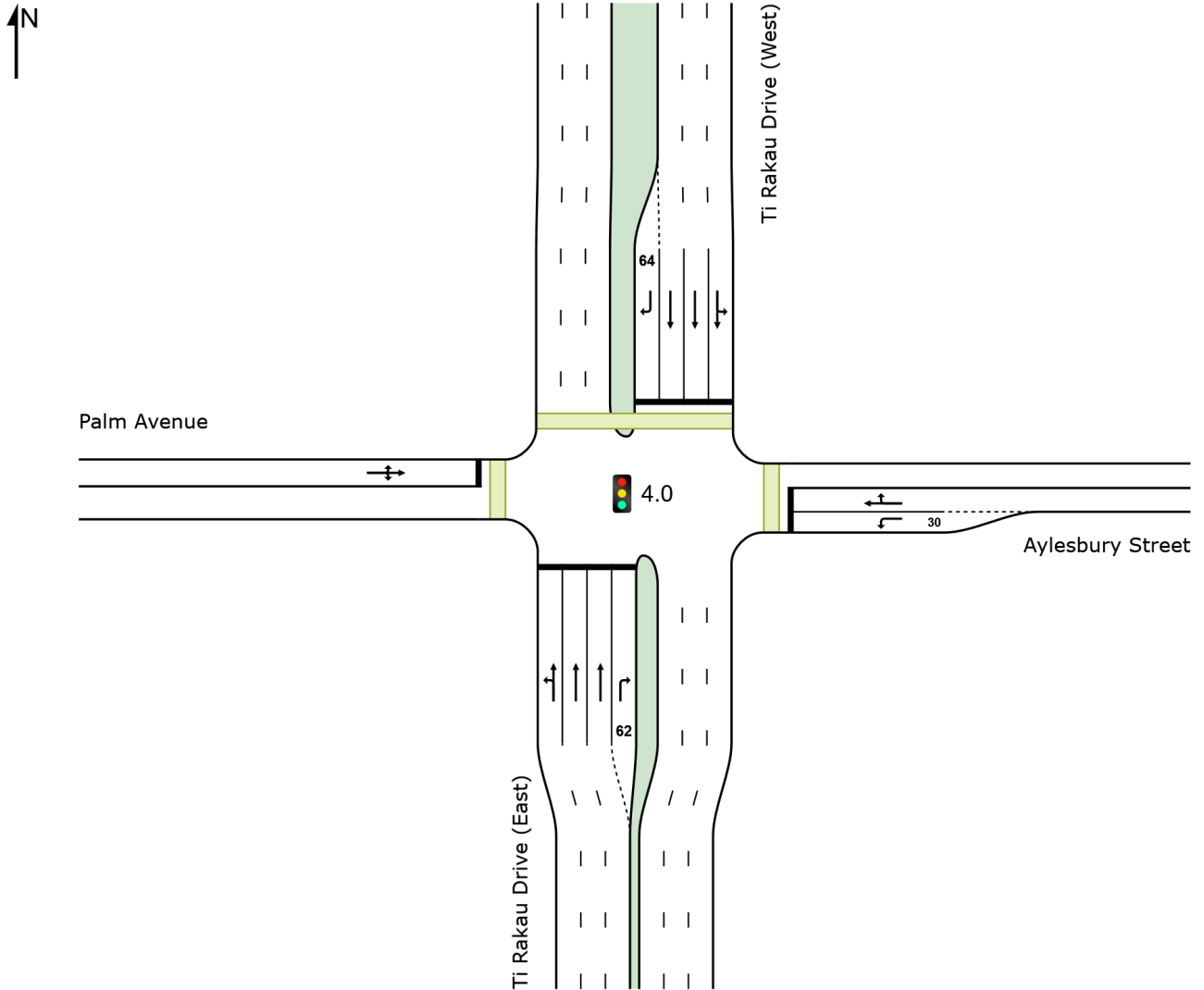
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SITE LAYOUT

Site: 4.0 [4.0 Palm Ave / Aylesbury St - Import (Site Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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LANE SUMMARY

Site: 4.0 [4.0 Palm Ave / Aylesbury St - Import (Site Folder: General)] Network: N101 [PM (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total HV]	%	[Total HV]	%						[Veh]	Dist] m				
South: Ti Rakau Drive (East)															
Lane 1	595	4.9	584	4.8	1204	0.485	100	15.4	LOS B	17.7	129.1	Full	110	0.0	29.6
Lane 2	620	5.1	608	5.1	1254	0.485	100	14.0	LOS B	17.5	127.9	Full	110	0.0	28.8
Lane 3	611	5.1	599	5.1	1237 ¹	0.485	100	13.9	LOS B	17.1	125.2	Full	110	0.0	26.8
Lane 4	10	0.0	10	0.0	70	0.139	100	82.9	LOS F	0.7	4.6	Short	62	0.0	NA
Approach	1836	5.0	1800 ^{N1}	5.0		0.485		14.8	LOS B	17.7	129.1				
East: Aylesbury Street															
Lane 1	27	3.7	27	3.7	67	0.404	100	61.3	LOS E	1.6	11.9	Short	30	-50.0 ^{N3}	NA
Lane 2	20	0.0	20	0.0	72	0.278	100	81.3	LOS F	1.4	9.5	Full	40	0.0	0.0
Approach	47	2.1	47	2.1		0.404		69.8	LOS E	1.6	11.9				
North: Ti Rakau Drive (West)															
Lane 1	415	7.6	408	7.6	624	0.654	100	16.1	LOS B	14.3	106.7	Full	174	-49.4 ^{N3}	0.0
Lane 2	410	7.7	403	7.8	616	0.654	100	16.5	LOS B	14.3	107.1	Full	174	-50.0 ^{N3}	0.0
Lane 3	400	7.7	393	7.8	601 ¹	0.654	100	16.3	LOS B	13.7	102.3	Full	174	-50.0 ^{N3}	0.0
Lane 4	43	7.0	42	7.0	67	0.630	100	86.9	LOS F	3.0	22.1	Short	64	0.0	NA
Approach	1268	7.6	1247 ^{N1}	7.7		0.654		18.7	LOS B	14.3	107.1				
West: Palm Avenue															
Lane 1	95	4.2	95	4.2	112	0.852	100	89.2	LOS F	7.0	50.8	Full	87	-30.1 ^{N3}	0.0
Approach	95	4.2	95	4.2		0.852		89.2	LOS F	7.0	50.8				
Intersection	3246	6.0	3189 ^{N1}	6.1		0.852		19.3	LOS B	17.7	129.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

Approach Lane Flows (veh/h)										
South: Ti Rakau Drive (East)										
Mov. From S To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	W	N	E							
Lane 1	63	521	-	584	4.8	1204	0.485	100	NA	NA
Lane 2	-	608	-	608	5.1	1254	0.485	100	NA	NA
Lane 3	-	599	-	599	5.1	1237 ¹	0.485	100	NA	NA
Lane 4	-	-	10	10	0.0	70	0.139	100	0.0	3

Approach	63	1728	10	1800	5.0		0.485				
East: Aylesbury Street											
Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	
From E						Cap.	Satn	Util.	SL	Ov.	Lane
To Exit:	S	W	N			veh/h	v/c	%	%	%	No.
Lane 1	27	-	-	27	3.7	67	0.404	100	0.0	2	
Lane 2	-	10	10	20	0.0	72	0.278	100	NA	NA	
Approach	27	10	10	47	2.1		0.404				
North: Ti Rakau Drive (West)											
Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	
From N						Cap.	Satn	Util.	SL	Ov.	Lane
To Exit:	E	S	W			veh/h	v/c	%	%	%	No.
Lane 1	10	398	-	408	7.6	624	0.654	100	NA	NA	
Lane 2	-	403	-	403	7.8	616	0.654	100	NA	NA	
Lane 3	-	393	-	393	7.8	601 ¹	0.654	100	NA	NA	
Lane 4	-	-	42	42	7.0	67	0.630	100	0.0	3	
Approach	10	1195	42	1247	7.7		0.654				
West: Palm Avenue											
Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	
From W						Cap.	Satn	Util.	SL	Ov.	Lane
To Exit:	N	E	S			veh/h	v/c	%	%	%	No.
Lane 1	44	10	41	95	4.2	112	0.852	100	NA	NA	
Approach	44	10	41	95	4.2		0.852				
Total %HV Deg. Satn (v/c)											
Intersection	3189	6.1		0.852							

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- ¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

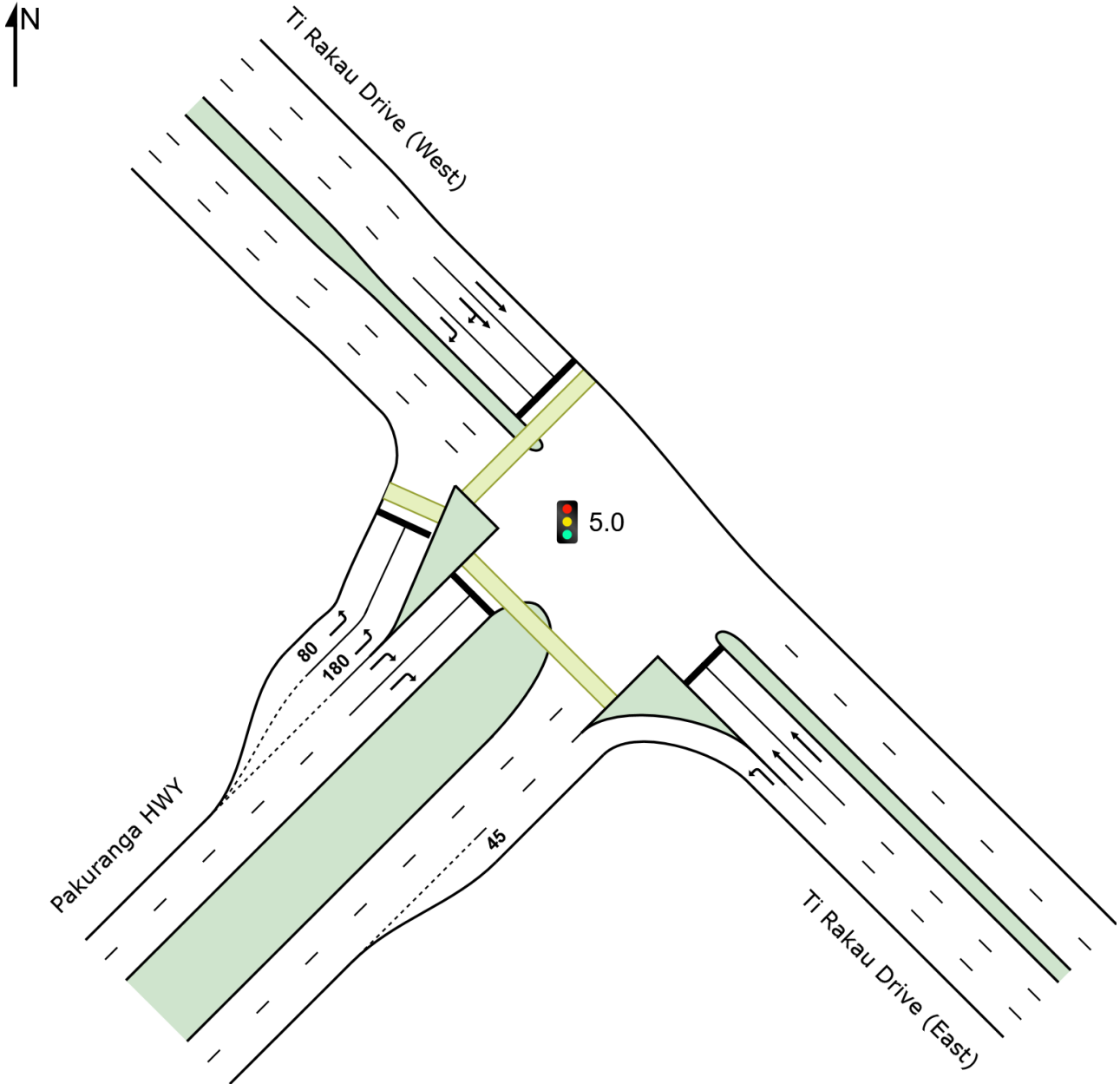
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
South Exit: Ti Rakau Drive (East) Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
Full Length Lane	2		Merge Analysis not applied.									
Full Length Lane	3		Merge Analysis not applied.									
East Exit: Aylesbury Street Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
North Exit: Ti Rakau Drive (West) Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									
Full Length Lane	2		Merge Analysis not applied.									
Full Length Lane	3		Merge Analysis not applied.									
West Exit: Palm Avenue Merge Type: Not Applied												
Full Length Lane	1		Merge Analysis not applied.									

SITE LAYOUT

Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.4\CS 1.4 PM - V1.sip9

LANE SUMMARY

Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]						[Veh	Dist]				
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			m	m	%	%	
SouthEast: Ti Rakau Drive (East)															
Lane 1	840	7.7	798	7.4	1727	0.462	100	6.5	LOS A	0.0	0.0	Full	91	0.0	0.0
Lane 2	379	5.7	361	5.6	385	0.939	100	85.8	LOS F	18.1 ^{N4}	133.0 ^{N4}	Full	91	-29.6 ^{N3}	50.0
Lane 3	382	5.7	364	5.6	387	0.939	100	85.6	LOS F	18.1 ^{N4}	133.0 ^{N4}	Full	91	-28.8 ^{N3}	50.0
Approach	1601	6.7	1523 ^{N1}	6.5		0.939		44.2	LOS D	18.1	133.0				
NorthWest: Ti Rakau Drive (West)															
Lane 1	442	9.0	435	9.0	535	0.813	100	56.1	LOS E	21.3 ^{N4}	160.7 ^{N4}	Full	110	0.0	50.0
Lane 2	433	6.9	426	7.0	524	0.813	100	60.4	LOS E	21.7 ^{N4}	160.7 ^{N4}	Full	110	0.0	50.0
Lane 3	420	6.7	414	6.8	509	0.813	100	61.1	LOS E	21.7 ^{N4}	160.7 ^{N4}	Full	110	0.0	50.0
Approach	1295	7.6	1275 ^{N1}	7.6		0.813		59.2	LOS E	21.7	160.7				
SouthWest: Pakuranga HWY															
Lane 1	532	4.7	532	4.7	541 ¹	0.985	100	90.6	LOS F	40.1	292.3	Short	80	-29.6 ^{N3}	NA
Lane 2	536	4.7	536	4.7	544 ¹	0.985	100	90.4	LOS F	40.3	293.2	Short	180	-28.8 ^{N3}	NA
Lane 3	492	5.7	492	5.7	521	0.944	100	88.7	LOS F	39.1	286.8	Full	1650	0.0	0.0
Lane 4	497	5.7	497	5.7	526	0.944	100	88.5	LOS F	39.4	289.4	Full	1650	0.0	0.0
Approach	2057	5.2	2057	5.2		0.985		89.6	LOS F	40.3	293.2				
Intersection	4953	6.3	4855 ^{N1}	6.4		0.985		67.4	LOS E	40.3	293.2				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)										
SouthEast: Ti Rakau Drive (East)										
Mov.	L2	T1	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov. Lane No.	Ov. Lane
From SE To Exit:	SW	NW		veh/h						
Lane 1	798	-	798	7.4	1727	0.462	100	NA	NA	NA
Lane 2	-	361	361	5.6	385	0.939	100	NA	NA	NA
Lane 3	-	364	364	5.6	387	0.939	100	NA	NA	NA
Approach	798	725	1523	6.5		0.939				
NorthWest: Ti Rakau Drive (West)										
Mov.	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov. Lane	Ov. Lane
From NW										

To Exit:	SE	SW			veh/h	v/c	%	%	No.
Lane 1	435	-	435	9.0	535	0.813	100	NA	NA
Lane 2	38	388	426	7.0	524	0.813	100	NA	NA
Lane 3	-	414	414	6.8	509	0.813	100	NA	NA
Approach	473	802	1275	7.6		0.813			
SouthWest: Pakuranga HWY									
Mov.	L2	R2	Total	%HV		Deg.	Lane	Prob.	Ov.
From SW					Cap.	Satn	Util.	SL Ov.	Lane
To Exit:	NW	SE			veh/h	v/c	%	%	No.
Lane 1	532	-	532	4.7	541 ¹	0.985	100	100.0	2
Lane 2	536	-	536	4.7	544 ¹	0.985	100	60.3	4
Lane 3	-	492	492	5.7	521	0.944	100	NA	NA
Lane 4	-	497	497	5.7	526	0.944	100	NA	NA
Approach	1068	989	2057	5.2		0.985			
Total %HV Deg. Satn (v/c)									
Intersection	4855	6.4		0.985					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- ¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
SouthEast Exit: Ti Rakau Drive (East)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
NorthWest Exit: Ti Rakau Drive (West)												
Merge Type: Not Applied												
Full Length Lane	1											
Full Length Lane	2											
Full Length Lane	3											
SouthWest Exit: Pakuranga HWY												
Merge Type: Priority												
Exit Short Lane	1	45	0.0	388	401	3.00	2.00	798	1390	0.574	0.6	2.0
Merge Lane	2	-	100.0					388	1800	0.216	0.0	0.0

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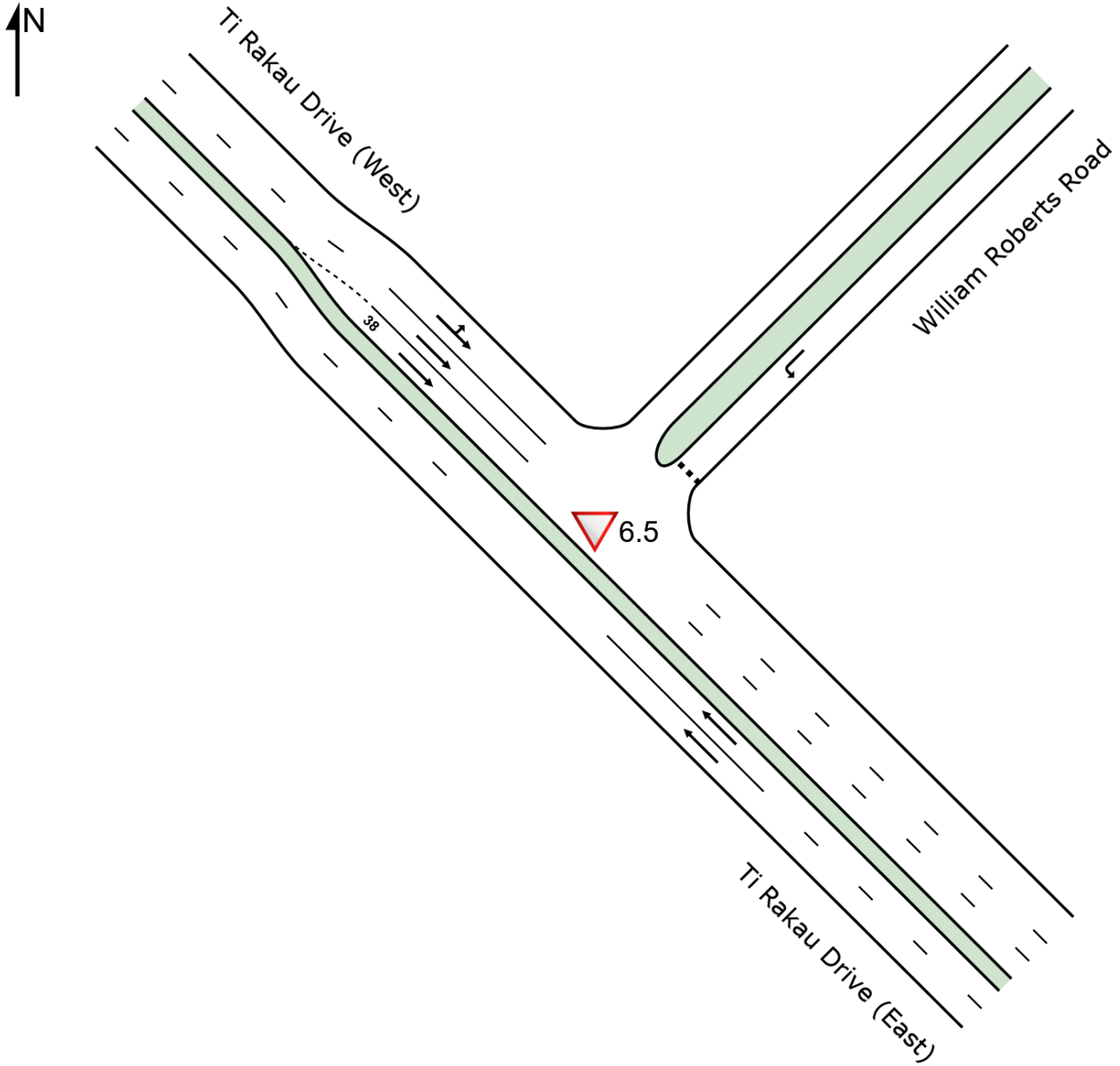
Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise | Processed: Tuesday, 7 February 2023 3:26:49 pm
 Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.4\CS 1.4 PM - V1.sip9

SITE LAYOUT

▽ Site: 6.5 [6.5 William Roberts Rd / Ti Rakau Dr - Import (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.4\CS 1.4 PM - V1.sip9

LANE SUMMARY

Site: 6.5 [6.5 William Roberts Rd / Ti Rakau Dr - Import (Site Folder: General)] Network: N101 [PM (Network Folder: General)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

Lane Use and Performance															
	DEMAND FLOWS [Total HV] veh/h %		ARRIVAL FLOWS [Total HV] veh/h %		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh Dist] m		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
SouthEast: Ti Rakau Drive (East)															
Lane 1	835	6.4	792	6.2	1826	0.434	100	0.0	LOS A	0.0	0.0	Full	18	0.0	0.0
Lane 2	826	6.4	784	6.2	1807	0.434	100	0.0	LOS A	0.0	0.0	Full	18	0.0	0.0
Approach	1661	6.4	1576 ^{N1}	6.2		0.434		0.0	NA	0.0	0.0				
NorthEast: William Roberts Road															
Lane 1	110	3.6	110	3.6	486	0.226	100	3.4	LOS A	0.3	2.2	Full	110	-50.0 ^{N7}	0.0
Approach	110	3.6	110	3.6		0.226		3.4	LOS A	0.3	2.2				
NorthWest: Ti Rakau Drive (West)															
Lane 1	565	7.3	562	7.3	1869	0.301	100	2.3	LOS A	0.0	0.0	Full	97	0.0	0.0
Lane 2	546	6.2	543	6.3	1806	0.301	100	0.0	LOS A	4.5 ^{N5}	33.4 ^{N5}	Full	97	0.0	0.0
Lane 3	350	6.2	348	6.3	1158	0.301	100	0.0	LOS A	0.0	0.0	Short	38	-35.9 ^{N3}	NA
Approach	1461	6.7	1454 ^{N1}	6.7		0.301		0.9	NA	4.5	33.4				
Intersection	3232	6.4	3140 ^{N1}	6.6		0.434		0.5	NA	4.5	33.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

N3 Capacity Adjustment due to downstream lane blockage determined by the program.

N5 Continuous Lane results determined by Back of Queue values of downstream lanes (proportional to lane movement flows).

N7 The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)									
SouthEast: Ti Rakau Drive (East)									
Mov.	T1	Total	%HV		Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane No.	
From SE To Exit:	NW			Cap. veh/h	v/c	%	%		
Lane 1	792	792	6.2	1826	0.434	100	NA	NA	
Lane 2	784	784	6.2	1807	0.434	100	NA	NA	
Approach	1576	1576	6.2		0.434				
NorthEast: William Roberts Road									
Mov.	L2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane No.	
From NE To Exit:	SE			Cap. veh/h	v/c	%	%		
Lane 1	110	110	3.6	486	0.226	100	NA	NA	

Approach	110	110	3.6							0.226
NorthWest: Ti Rakau Drive (West)										
Mov. From NW To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.	
	NE	SE								
Lane 1	275	288	562	7.3	1869	0.301	100	NA	NA	
Lane 2	-	543	543	6.3	1806	0.301	100	NA	NA	
Lane 3	-	348	348	6.3	1158	0.301	100	0.0	2	
Approach	275	1179	1454	6.7		0.301				
Total %HV Deg. Satn (v/c)										
Intersection	3140	6.6		0.434						

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

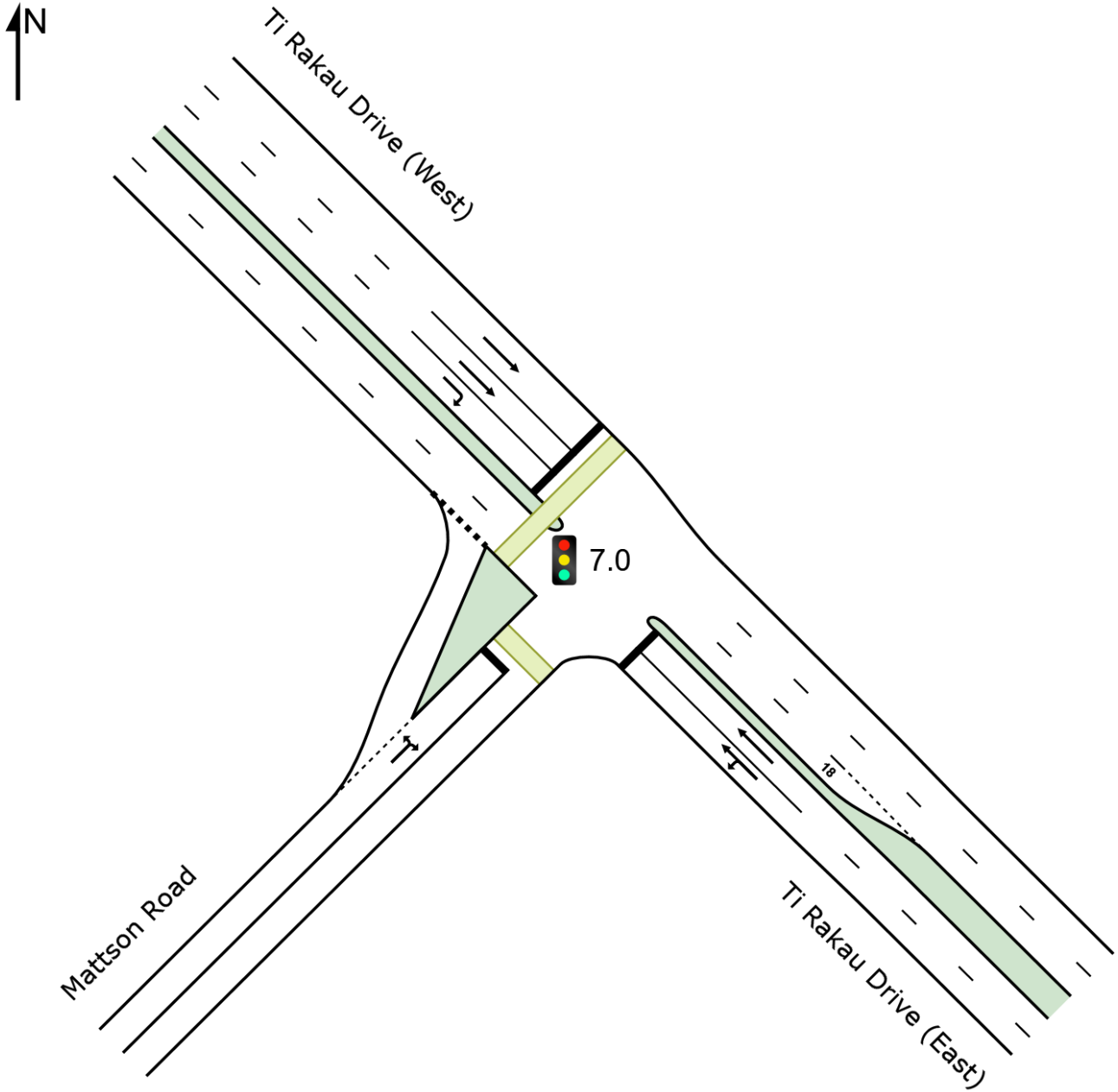
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate veh/h	Lane Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
SouthEast Exit: Ti Rakau Drive (East)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.
Full Length Lane	3											Merge Analysis not applied.
NorthEast Exit: William Roberts Road												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
NorthWest Exit: Ti Rakau Drive (West)												
Merge Type: Not Applied												
Full Length Lane	1											Merge Analysis not applied.
Full Length Lane	2											Merge Analysis not applied.

SITE LAYOUT

Site: 7.0 [7.0 Mattson Rd/ Ti Rakau Dr (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandennee\Eastern Busway Alliance\PAA - 05 DESIGN MGMT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.4\CS 1.4 PM - V1.sip9

LANE SUMMARY

Site: 7.0 [7.0 Mattson Rd/ Ti Rakau Dr (Site Folder: General)] Network: N101 [PM (Network Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 68 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
	veh/h	%	veh/h	%							m				
SouthEast: Ti Rakau Drive (East)															
Lane 1	837	6.6	794	6.4	895	0.887	100	28.4	LOS C	27.7	204.7	Full	187	0.0	23.3
Lane 2	845	6.5	801	6.3	903	0.887	100	28.3	LOS C	27.9	205.7	Full	187	0.0	23.7
Approach	1682	6.5	1594 ^N	6.3		0.887		28.4	LOS C	27.9	205.7				
NorthWest: Ti Rakau Drive (West)															
Lane 1	618	6.0	615	6.0	1316	0.467	100	5.6	LOS A	3.6 ^{N4}	26.3 ^{N4}	Full	18	0.0	50.0
Lane 2	580	6.0	578	6.0	1236	0.467	100	5.6	LOS A	3.6 ^{N4}	26.3 ^{N4}	Full	18	0.0	50.0
Lane 3	97	6.2	97	6.2	154	0.628	100	38.1	LOS D	3.1	22.6	Full	18	0.0	35.9
Approach	1295	6.0	1289 ^N	6.0		0.628		8.0	LOS A	3.6	26.3				
SouthWest: Mattson Road															
Lane 1	71	1.4	71	1.4	405	0.175	100	24.5	LOS C	1.7	12.3	Full	282	0.0	0.0
Approach	71	1.4	71	1.4		0.175		24.5	LOS C	1.7	12.3				
Intersection	3048	6.2	2954 ^N	6.4		0.887		19.4	LOS B	27.9	205.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)										
SouthEast: Ti Rakau Drive (East)										
Mov.	L2	T1	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane
From SE					veh/h	v/c	%	%	No.	
To Exit:	SW	NW								
Lane 1	42	752	794	6.4	895	0.887	100	NA	NA	
Lane 2	-	801	801	6.3	903	0.887	100	NA	NA	
Approach	42	1552	1594	6.3		0.887				
NorthWest: Ti Rakau Drive (West)										
Mov.	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane
From NW					veh/h	v/c	%	%	No.	
To Exit:	SE	SW								
Lane 1	615	-	615	6.0	1316	0.467	100	NA	NA	
Lane 2	578	-	578	6.0	1236	0.467	100	NA	NA	
Lane 3	-	97	97	6.2	154	0.628	100	NA	NA	
Approach	1193	97	1289	6.0		0.628				
SouthWest: Mattson Road										
Mov.	L2	R2	Total	%HV	Deg.	Lane	Prob.	Ov.		

From SW To Exit:	NW	SE			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	23	48	71	1.4	405	0.175	100	NA	NA
Approach	23	48	71	1.4		0.175			
Total %HV Deg. Satn (v/c)									
Intersection	2954	6.4		0.887					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East) Merge Type: Priority												
Exit Short Lane	3	18	0.0	578	595	3.00	2.00	48	1186	0.040	1.1	1.3
Merge Lane	2	-	100.0	Merge Lane is not Opposed				578	1800	0.321	0.0	0.0
NorthWest Exit: Ti Rakau Drive (West) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
SouthWest Exit: Mattson Road Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										

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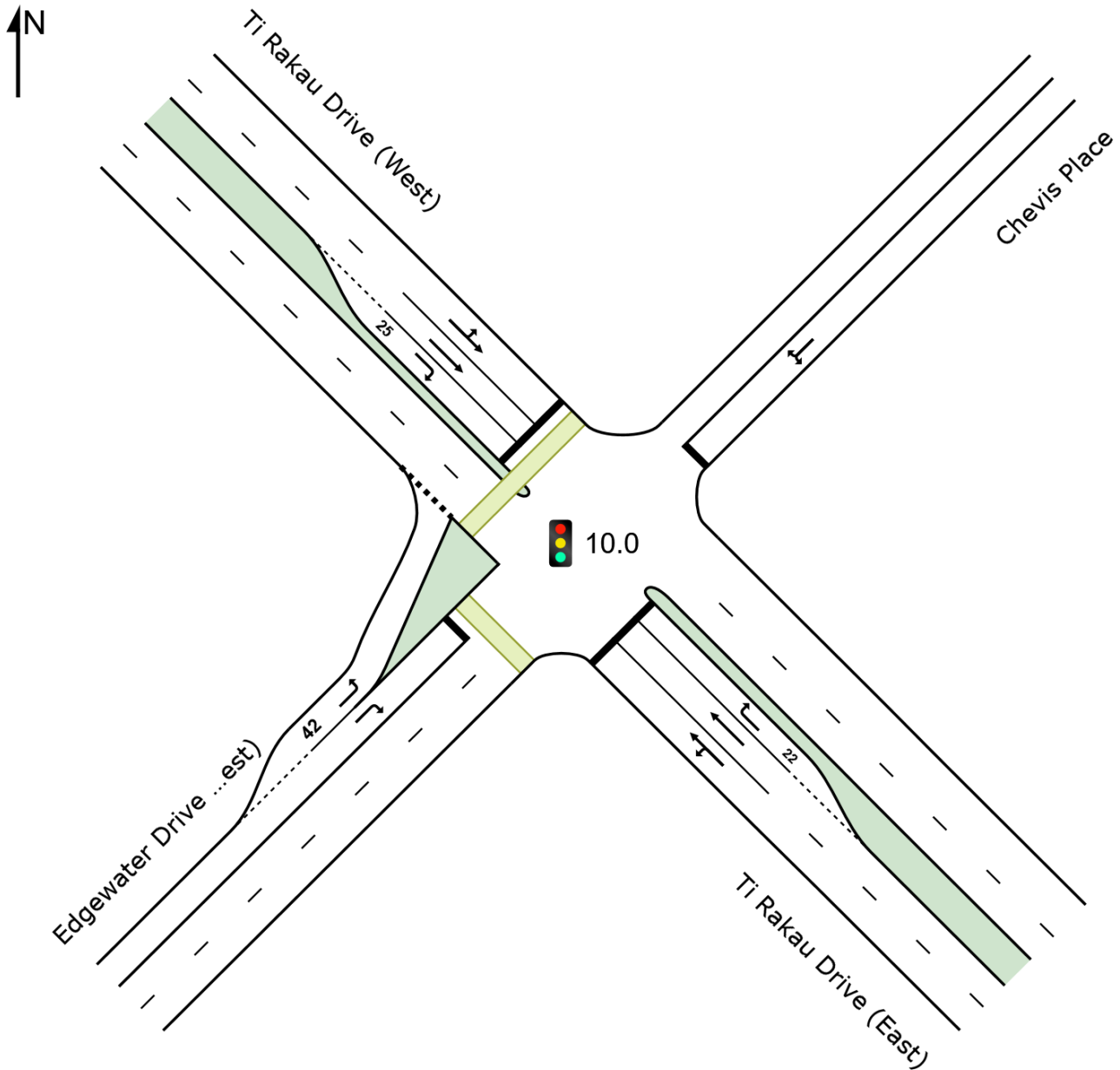
Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise | Processed: Tuesday, 7 February 2023 3:26:49 pm
Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.4\CS 1.4 PM - V1.sip9

SITE LAYOUT

Site: 10.0 [10.0 Edgewater Dr (West) / Chevis Pl (Site Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandenhoeveer\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.4\CS 1.4 PM - V1.sip9

LANE SUMMARY

Site: 10.0 [10.0 Edgewater Dr (West) / Chevis Pl (Site Folder: **Network: N101 [PM (Network General)]** Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 105 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV %	[Total veh/h	HV %						[Veh	Dist] m				
SouthEast: Ti Rakau Drive (East)															
Lane 1	888	6.5	876	6.4	981	0.893	100	35.7	LOS D	37.6 ^{N4}	277.6 ^{N4}	Full	190	0.0	50.0
Lane 2	872	6.4	860	6.4	964 ¹	0.893	100	34.8	LOS C	37.6 ^{N4}	277.6 ^{N4}	Full	190	0.0	50.0
Lane 3	11	9.1	11	9.0	96	0.113	100	58.4	LOS E	0.5	3.8	Short	22	0.0	NA
Approach	1772	6.5	1747 ^N ₁	6.4		0.893		35.4	LOS D	37.6	277.6				
NorthEast: Chevis Place															
Lane 1	20	0.0	20	0.0	140	0.143	100	55.6	LOS E	0.9	6.3	Full	138	0.0	0.0
Approach	20	0.0	20	0.0		0.143		55.6	LOS E	0.9	6.3				
NorthWest: Ti Rakau Drive (West)															
Lane 1	540	2.5	524	2.5	1030	0.509	100	17.4	LOS B	13.9 ^{N4}	99.4 ^{N4}	Full	68	0.0	50.0
Lane 2	428	2.5	415	2.6	815 ¹	0.509	100	16.3	LOS B	11.5	82.6	Full	68	0.0	32.8
Lane 3	89	7.1	87	7.3	98	0.889	100	70.0	LOS E	4.7	34.7	Short	25	0.0	NA
Approach	1057	2.9	1026 ^N ₁	3.0		0.889		21.4	LOS C	13.9	99.4				
SouthWest: Edgewater Drive (West)															
Lane 1	102	5.2	102	5.2	627	0.163	100	19.1	LOS B	2.4	17.5	Short	42	0.0	NA
Lane 2	55	9.6	55	9.6	232	0.236	100	50.8	LOS D	2.3	17.5	Full	500	0.0	0.0
Approach	157	6.7	157	6.7		0.236		30.2	LOS C	2.4	17.5				
Intersection	3006	5.2	2951 ^N ₁	5.3		0.893		30.4	LOS C	37.6	277.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

^{N4} Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)										
SouthEast: Ti Rakau Drive (East)										
Mov. From SE To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.
	SW	NW	NE							
Lane 1	152	725	-	876	6.4	981	0.893	100	NA	NA
Lane 2	-	860	-	860	6.4	964 ¹	0.893	100	NA	NA
Lane 3	-	-	11	11	9.0	96	0.113	100	0.0	2
Approach	152	1585	11	1747	6.4		0.893			
NorthEast: Chevis Place										
Mov.	L2	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	

From NE To Exit:	SE	NW				Cap. veh/h	Satn v/c	Util. %	SL %	Ov. %	Lane No.
Lane 1	10	10	20	0.0		140	0.143	100	NA	NA	
Approach	10	10	20	0.0			0.143				
NorthWest: Ti Rakau Drive (West)											
Mov. From NW To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. %	Ov. Lane No.
Lane 1	10	515	-	524	2.5	1030	0.509	100	NA	NA	
Lane 2	-	415	-	415	2.6	815 ¹	0.509	100	NA	NA	
Lane 3	-	-	87	87	7.3	98	0.889	100	45.3		2
Approach	10	930	87	1026	3.0		0.889				
SouthWest: Edgewater Drive (West)											
Mov. From SW To Exit:	L2	R2	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. %	Ov. Lane No.
Lane 1	102	-	102	5.2		627	0.163	100	0.0		2
Lane 2	-	55	55	9.6		232	0.236	100	NA	NA	
Approach	102	55	157	6.7			0.236				
Total %HV Deg.Satn (v/c)											
Intersection	2951	5.3		0.893							

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- ¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

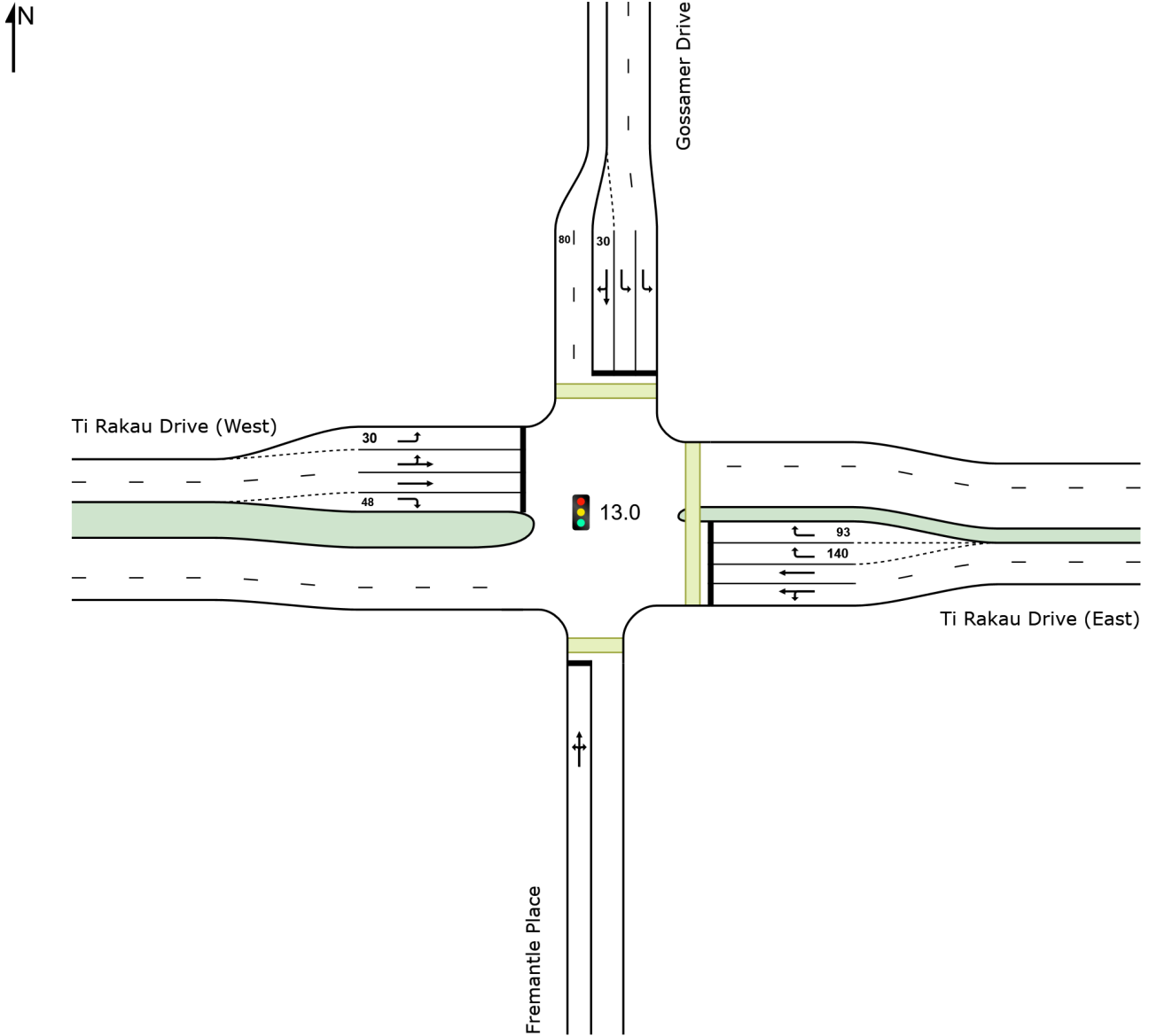
Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East)											
Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								
Full Length Lane	2		Merge Analysis not applied.								
NorthEast Exit: Chevis Place											
Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								
NorthWest Exit: Ti Rakau Drive (West)											
Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								
Full Length Lane	2		Merge Analysis not applied.								
SouthWest Exit: Edgewater Drive (West)											
Merge Type: Not Applied											
Full Length Lane	1		Merge Analysis not applied.								
Full Length Lane	2		Merge Analysis not applied.								

SITE LAYOUT

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: General)]

Scheme Design
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandenhoeveer\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 1.4\CS 1.4 PM - V1.sip9

LANE SUMMARY

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: General)]

Network: N101 [PM (Network Folder: General)]

Scheme Design

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total	HV]	[Total	HV]	veh/h	v/c	%	sec		[Veh	Dist]		m	%	%
	veh/h	%	veh/h	%	veh/h	v/c	%	sec		Dist]	m		m	%	%
South: Fremantle Place															
Lane 1	40	5.0	40	5.0	97	0.413	100	81.6	LOS F	2.7	19.6	Full	285	0.0	0.0
Approach	40	5.0	40	5.0		0.413		81.6	LOS F	2.7	19.6				
East: Ti Rakau Drive (East)															
Lane 1	906	6.5	906	6.5	901	1.005	100	77.9	LOS E	71.7	530.0	Full	636	0.0	0.0
Lane 2	775	6.6	775	6.6	771 ¹	1.005	100	98.9	LOS F	73.5	543.3	Full	636	0.0	0.8
Lane 3	258	8.6	258	8.6	505	0.511	47 ⁶	29.7	LOS C	8.4	62.8	Short	140	0.0	NA
Lane 4	548	8.6	548	8.6	505	1.084	100	141.5	LOS F	45.1	338.5	Short	93	0.0	NA
Approach	2487	7.2	2487	7.2		1.084		93.5	LOS F	73.5	543.3				
North: Gossamer Drive															
Lane 1	259	17.8	259	17.8	757	0.342	100	22.2	LOS C	8.2	66.2	Full	1010	0.0	0.0
Lane 2	246	17.8	246	17.8	719 ¹	0.342	100	22.0	LOS C	7.7	62.2	Full	1010	0.0	0.0
Lane 3	61	4.9	61	4.9	238	0.256	100	67.3	LOS E	3.6	26.5	Short	30	0.0	NA
Approach	566	16.4	566	16.4		0.342		26.9	LOS C	8.2	66.2				
West: Ti Rakau Drive (West)															
Lane 1	170	0.6	165	0.6	822	0.200	28 ⁵	19.3	LOS B	4.1	29.1	Short	30	0.0	NA
Lane 2	348	3.3	337	3.4	464 ¹	0.726	100	44.2	LOS D	17.9	129.2	Full	479	0.0	0.0
Lane 3	445	3.3	432	3.4	595 ¹	0.726	100	47.3	LOS D	24.7	177.6	Full	479	0.0	0.0
Lane 4	13	0.0	13	0.0	312	0.040	100	59.7	LOS E	0.7	4.8	Short	48	0.0	NA
Approach	976	2.8	946 ^{N1}	2.9		0.726		41.5	LOS D	24.7	177.6				
Intersection	4069	7.4	4039 ^{N1}	7.5		1.084		71.8	LOS E	73.5	543.3				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

⁵ Lane under-utilisation found by the program

⁶ Lane under-utilisation due to downstream effects

^{N1} Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)											
South: Fremantle Place											
Mov. From S To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Ov. %	Ov. Lane No.
Lane 1	13	10	17	40	5.0	97	0.413	100	NA	NA	
Approach	13	10	17	40	5.0		0.413				
East: Ti Rakau Drive (East)											

Mov. From E To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	23	883	-	906	6.5	901	1.005	100	NA	NA
Lane 2	-	775	-	775	6.6	771 ¹	1.005	100	NA	NA
Lane 3	-	-	258	258	8.6	505	0.511	47 ⁶	98.9	2
Lane 4	-	-	548	548	8.6	505	1.084	100	100.0	3
Approach	23	1658	806	2487	7.2		1.084			
North: Gossamer Drive										
Mov. From N To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	259	-	-	259	17.8	757	0.342	100	NA	NA
Lane 2	246	-	-	246	17.8	719 ¹	0.342	100	NA	NA
Lane 3	-	12	49	61	4.9	238	0.256	100	3.8	2
Approach	505	12	49	566	16.4		0.342			
West: Ti Rakau Drive (West)										
Mov. From W To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	165	-	-	165	0.6	822	0.200	28 ⁵	12.4	2
Lane 2	-	337	-	337	3.4	464 ¹	0.726	100	NA	NA
Lane 3	-	432	-	432	3.4	595 ¹	0.726	100	NA	NA
Lane 4	-	-	13	13	0.0	312	0.040	100	0.0	3
Approach	165	769	13	946	2.9		0.726			
Total %HV Deg. Satn (v/c)										
Intersection	4039	7.5		1.084						

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

- 1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
- 5 Lane under-utilisation found by the program
- 6 Lane under-utilisation due to downstream effects

Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec		
South Exit: Fremantle Place Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Ti Rakau Drive (East) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: Gossamer Drive Merge Type: Zipper												
Exit Short Lane	1	80	50.0	258	269	2.50	2.00	423	1474	0.287	0.0	0.2
Merge Lane	2	-	50.0	211	217	2.50	2.00	515	1542	0.334	0.0	0.1
West Exit: Ti Rakau Drive (West) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

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Attachment 2 – Tracking Curves

TRACKING VEHICLE

(AT Design Vehicle) - 12.6m Urban Bus (RTS18)

Overall Length	12.600m
Overall Width	2.550m
Overall Body Height	3.311m
Min Body Ground Clearance	0.268m
Track Width	2.550m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	12.500m

TRACKING VEHICLE

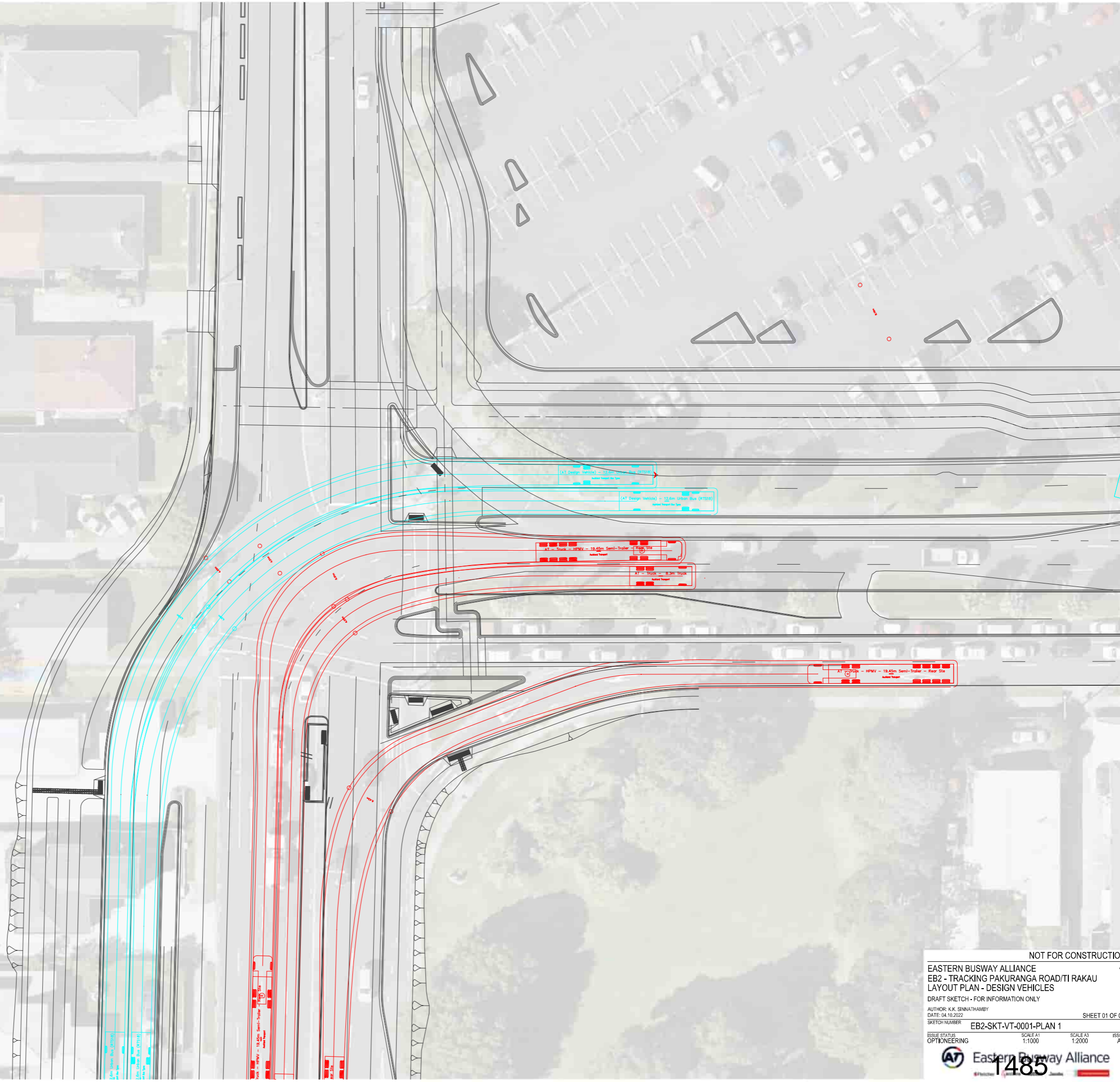
AT - Truck - 8.3m Truck

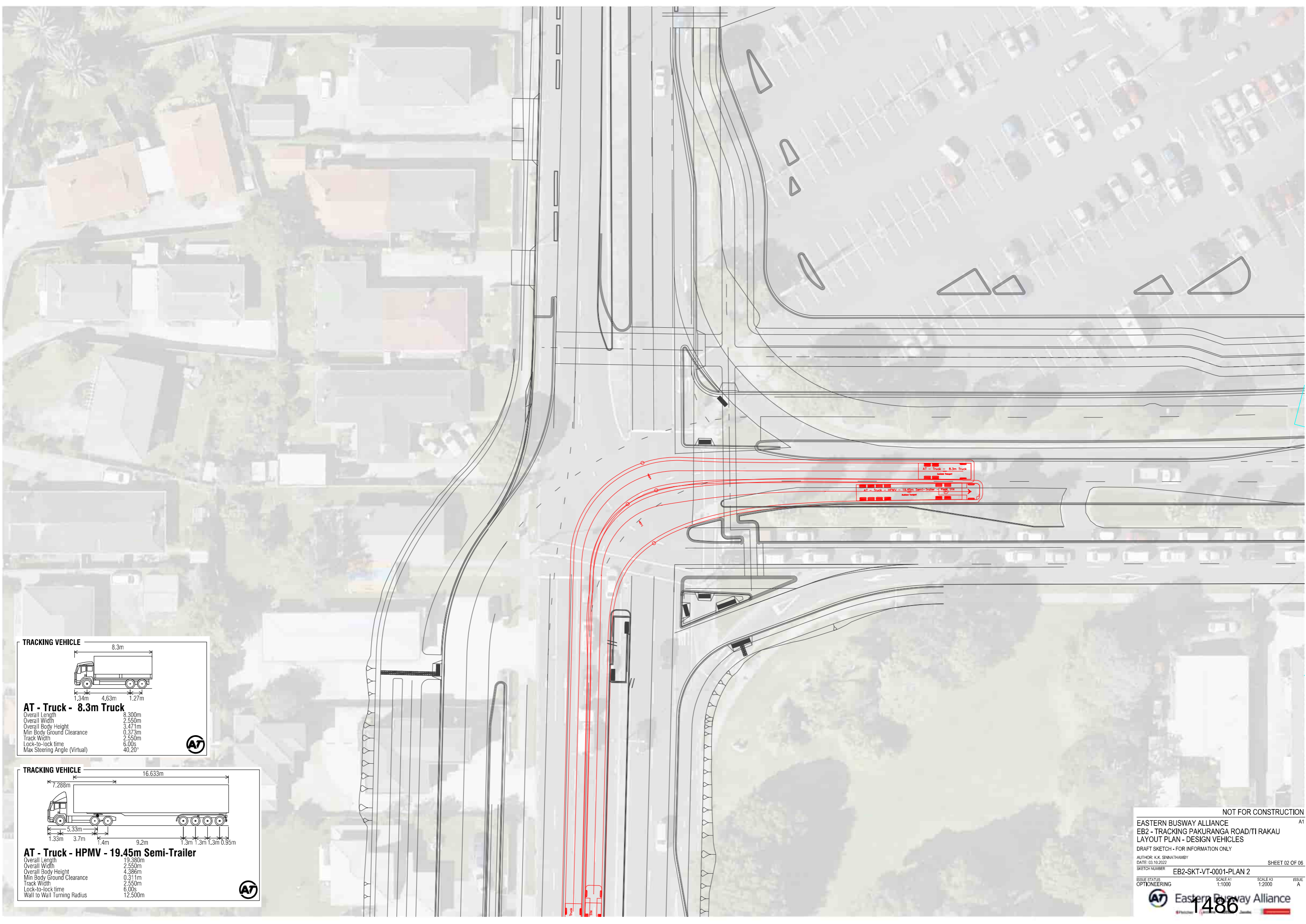
Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

TRACKING VEHICLE

AT - Truck - HPMV - 19.45m Semi-Trailer

Overall Length	19.380m
Overall Width	2.550m
Overall Body Height	4.386m
Min Body Ground Clearance	0.311m
Track Width	2.550m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	12.500m





TRACKING VEHICLE

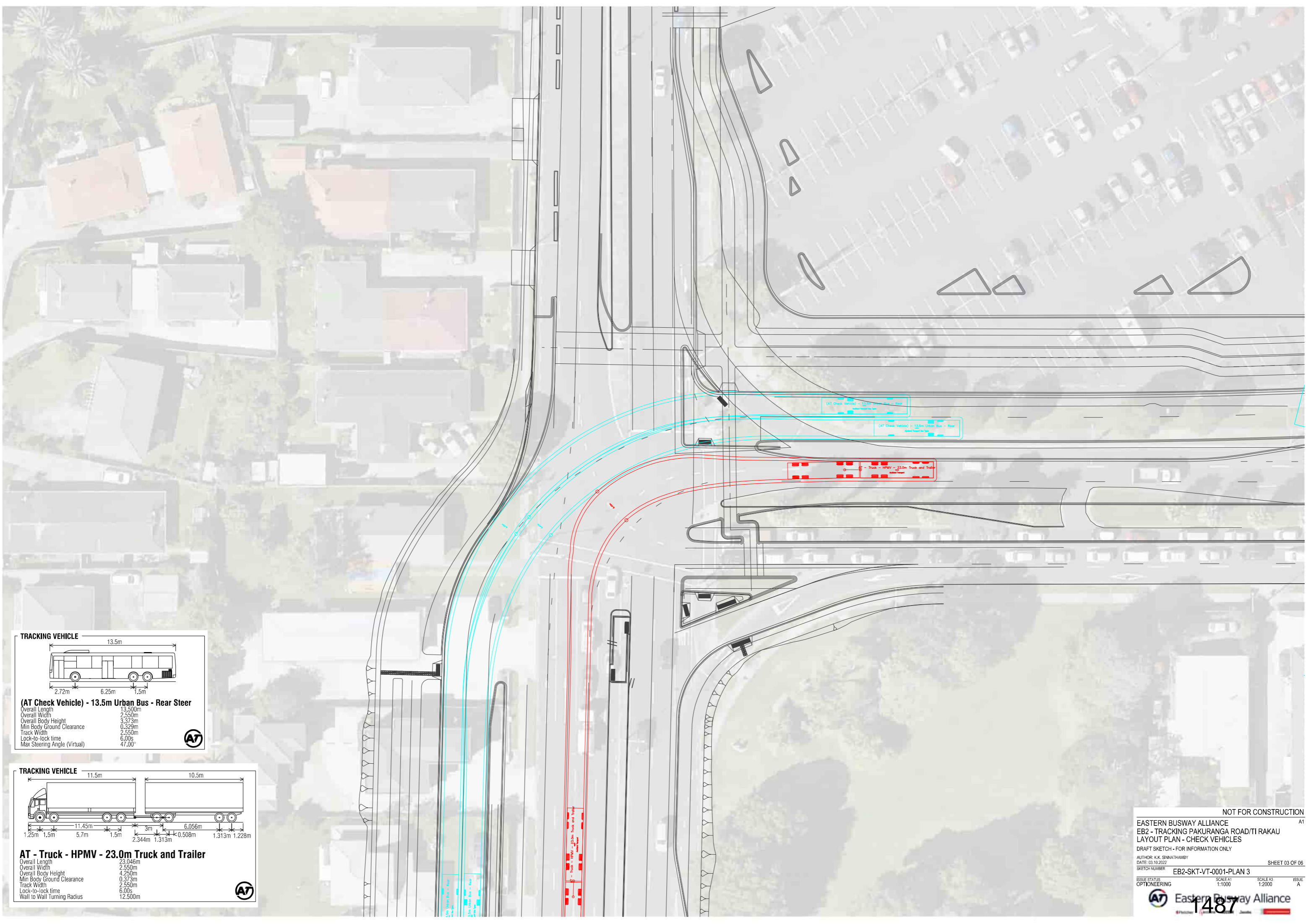
AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

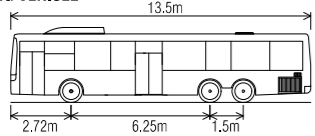
TRACKING VEHICLE

AT - Truck - HPMV - 19.45m Semi-Trailer

Overall Length	19.380m
Overall Width	2.550m
Overall Body Height	4.386m
Min Body Ground Clearance	0.311m
Track Width	2.550m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	12.500m



TRACKING VEHICLE

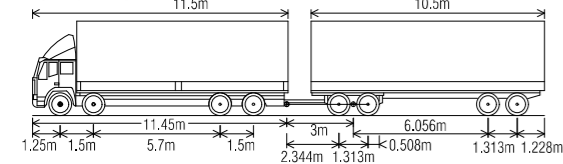


(AT Check Vehicle) - 13.5m Urban Bus - Rear Steer

Overall Length	13.500m
Overall Width	2.550m
Overall Body Height	3.373m
Min Body Ground Clearance	0.329m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	47.00°



TRACKING VEHICLE



AT - Truck - HPMV - 23.0m Truck and Trailer

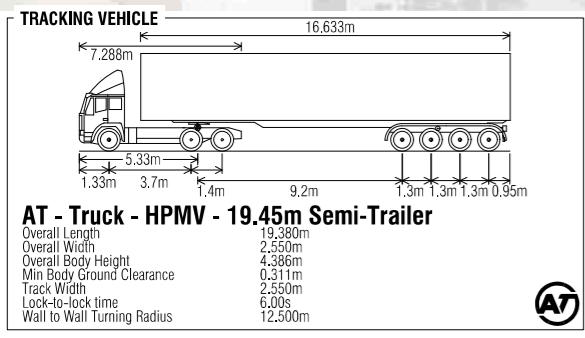
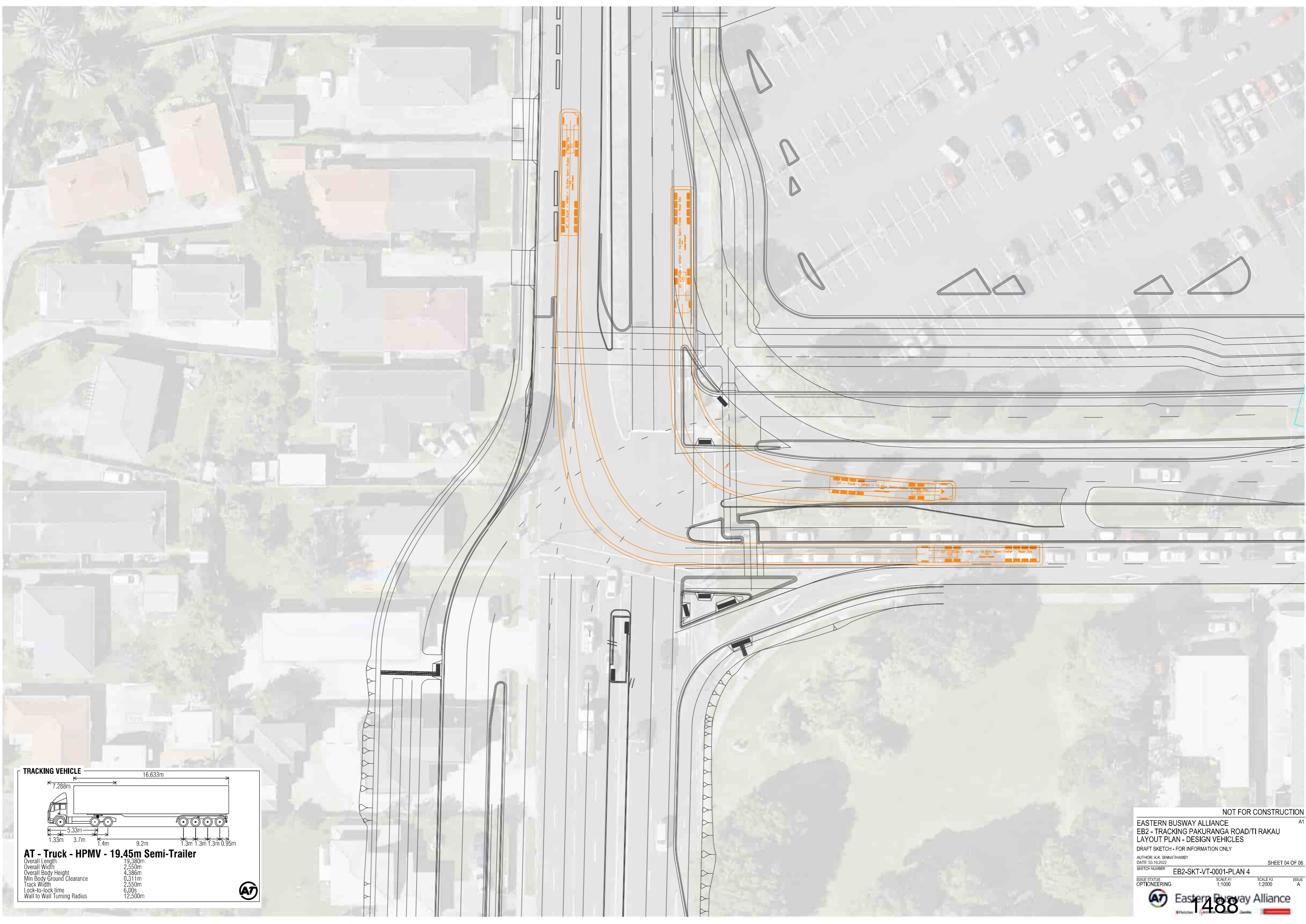
Overall Length	23.046m
Overall Width	2.550m
Overall Body Height	4.250m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	12.500m

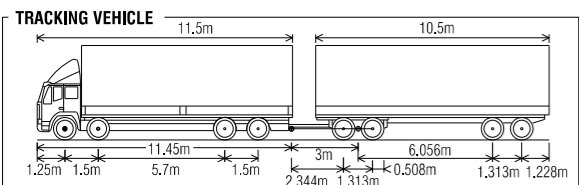
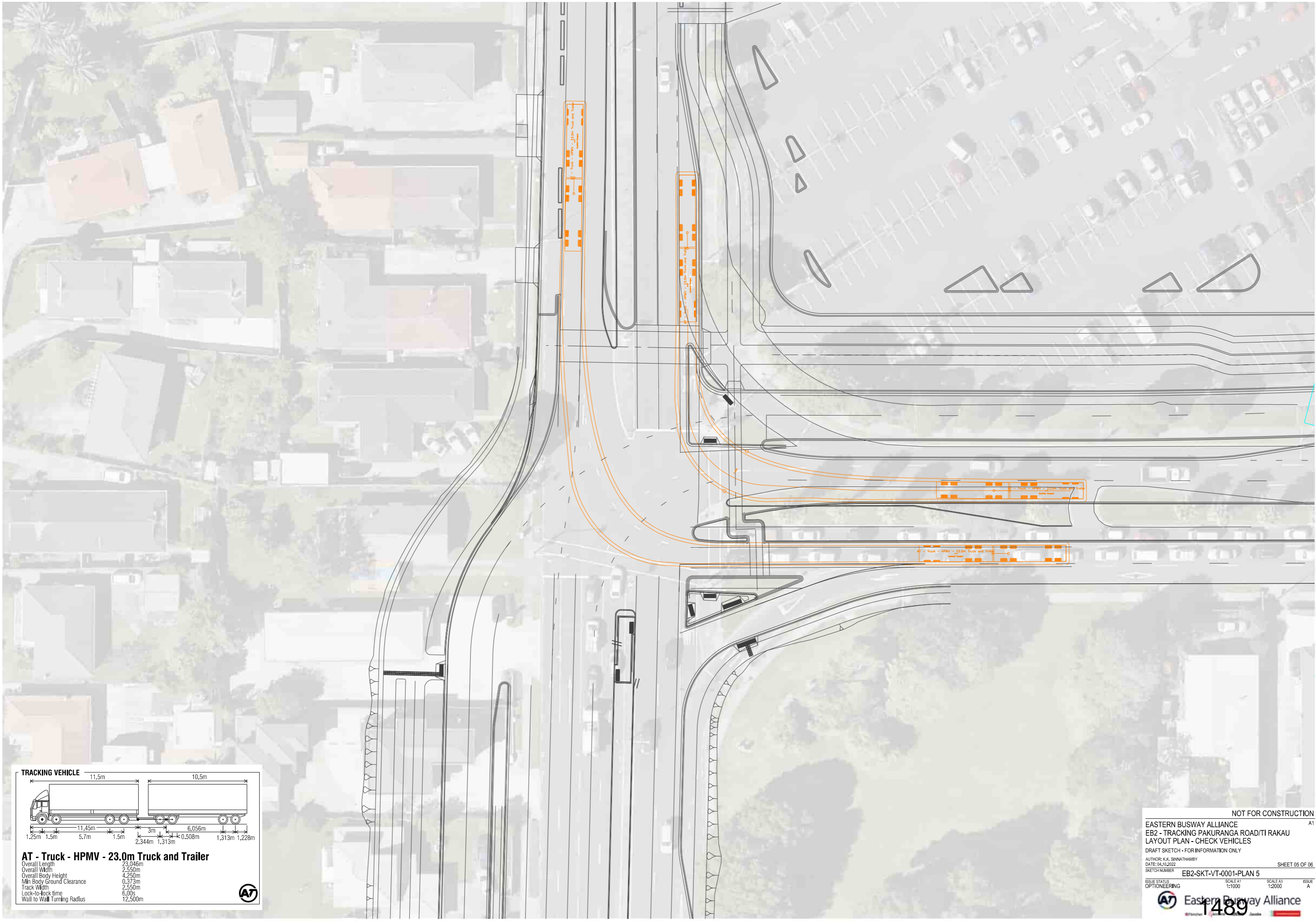


NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
 EB2 - TRACKING PAKURANGA ROAD/TI RAKAU
 LAYOUT PLAN - CHECK VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY
 AUTHOR: K.K. SINNATHAMBY
 DATE: 03.10.2022
 SHEET 03 OF 06
 SKETCH NUMBER: EB2-SKT-VT-0001-PLAN 3
 ISSUE STATUS: OPTONEERING
 SCALE A1: 1:1000
 SCALE A3: 1:2000
 ISSUE: A





AT - Truck - HPMV - 23.0m Truck and Trailer

Overall Length	23.046m
Overall Width	2.550m
Overall Body Height	4.250m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	12.500m



NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
 EB2 - TRACKING PAKURANGA ROAD/TI RAKAU
 LAYOUT PLAN - CHECK VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY

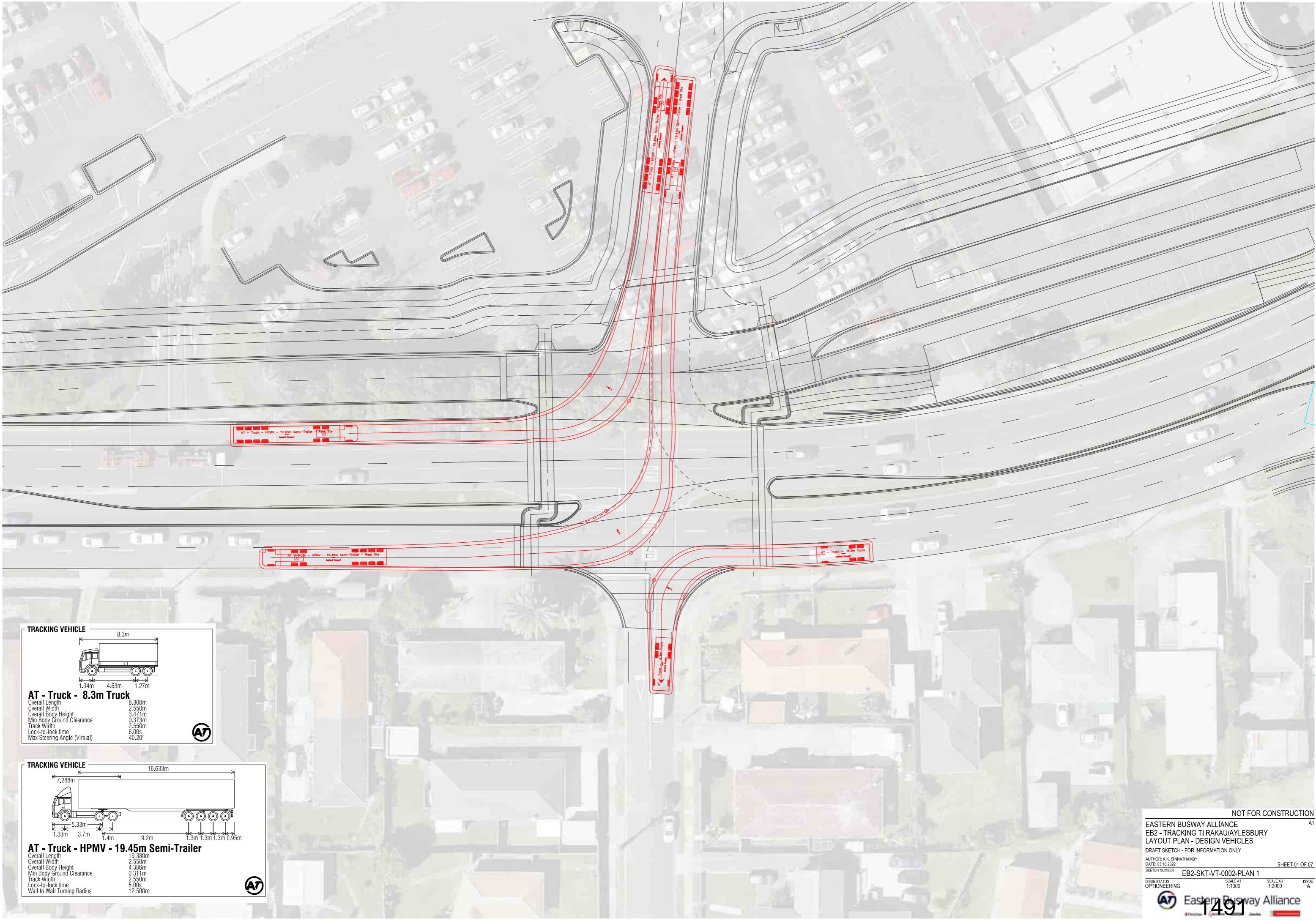
AUTHOR: K.K. SINNATHAMBY

DATE: 04.10.2022

SKETCH NUMBER: EB2-SKT-VT-0001-PLAN 5 SHEET 05 OF 06

ISSUE STATUS: OPTIONEERING SCALE A1: 1:1000 SCALE A3: 1:2000 ISSUE: A





TRACKING VEHICLE

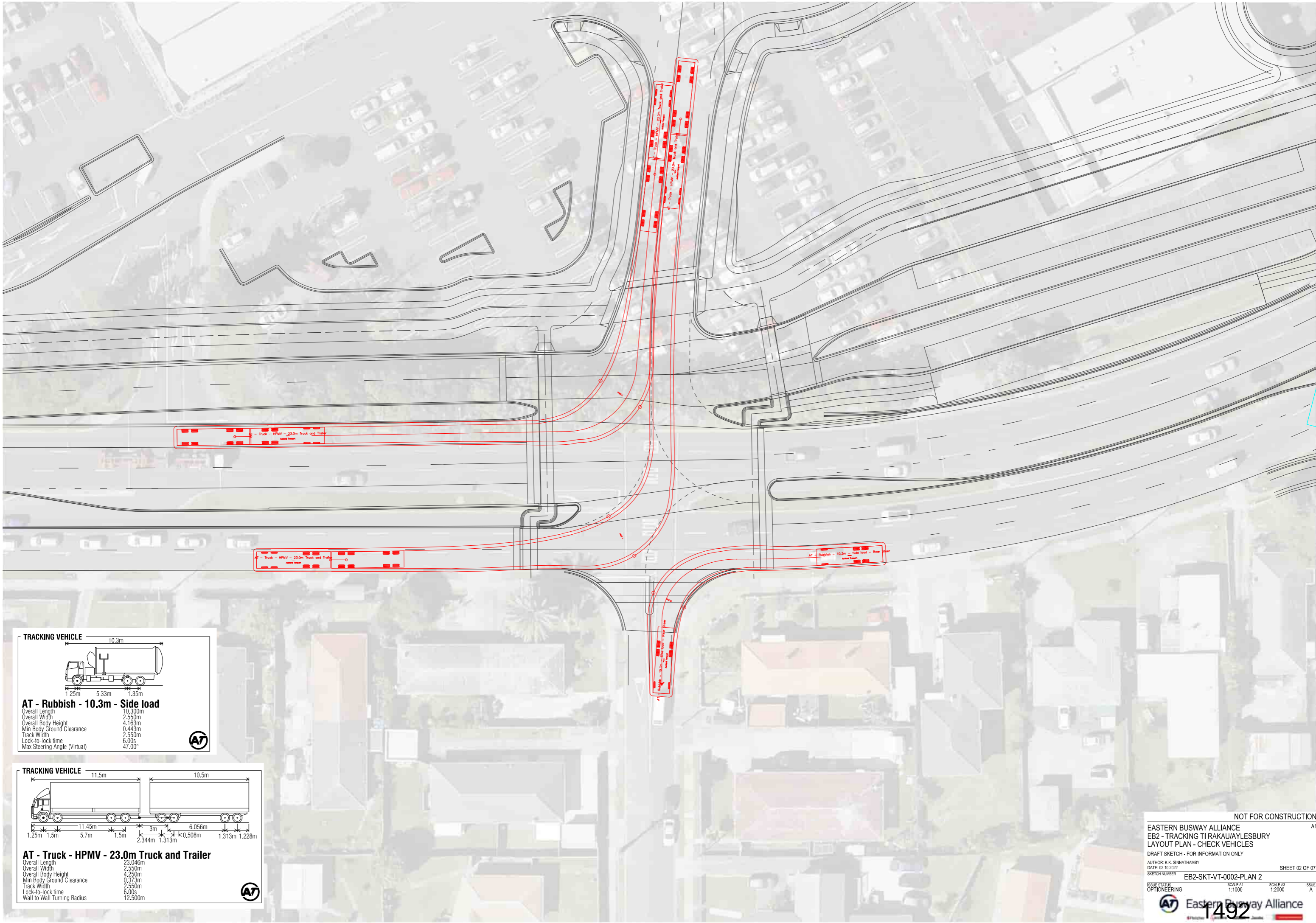
AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

TRACKING VEHICLE

AT - Truck - HPMV - 19.45m Semi-Trailer

Overall Length	19.380m
Overall Width	2.550m
Overall Body Height	4.386m
Min Body Ground Clearance	0.311m
Track Width	2.550m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	12.500m



TRACKING VEHICLE

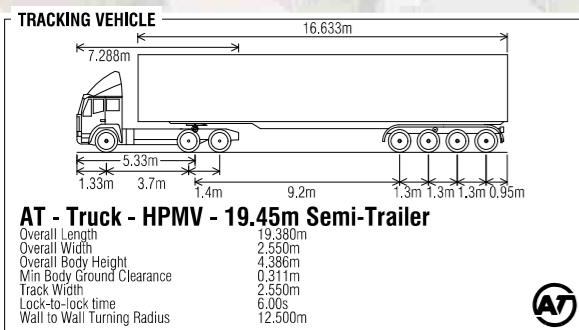
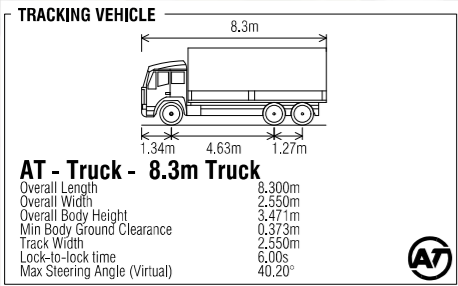
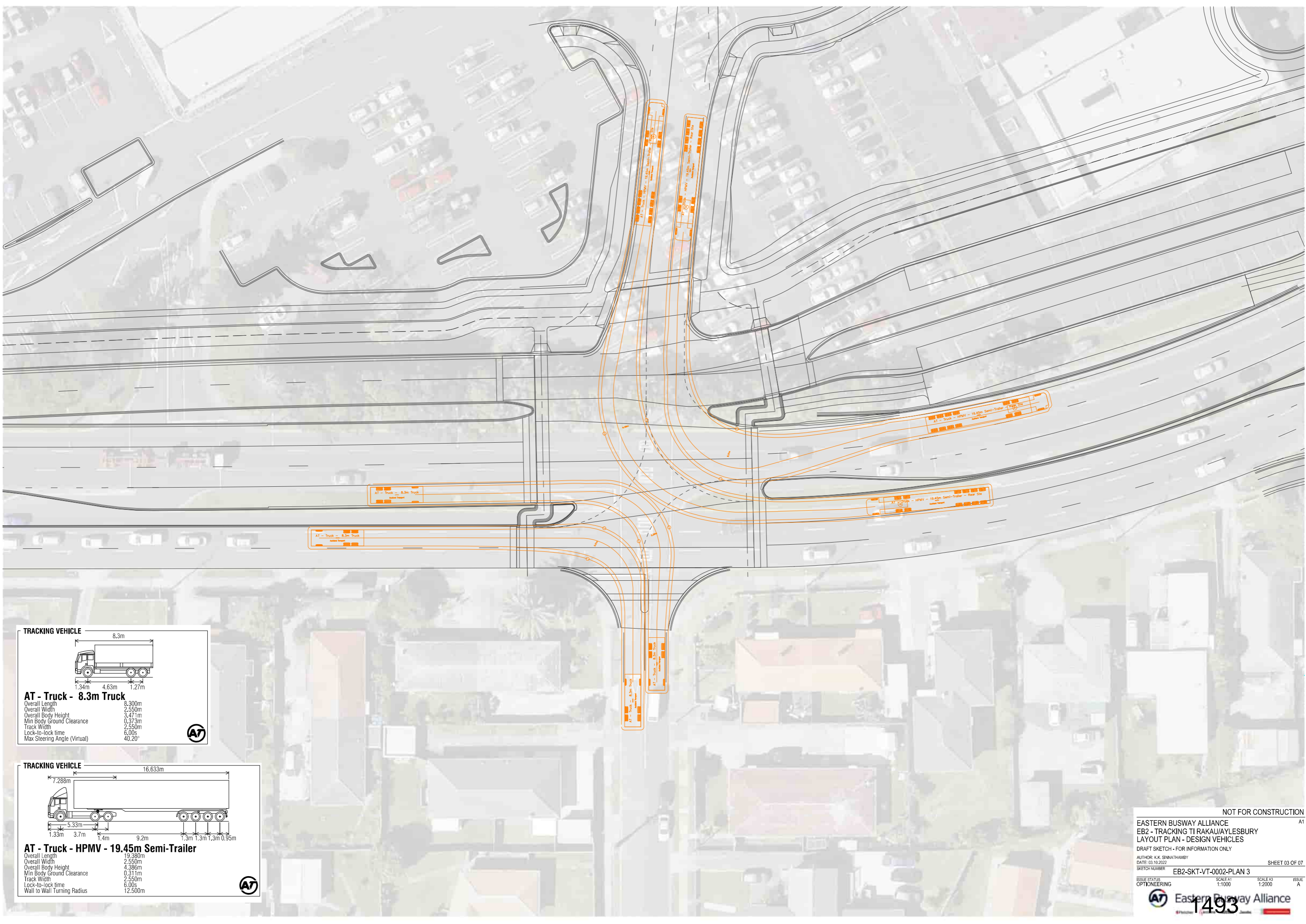
AT - Rubbish - 10.3m - Side load

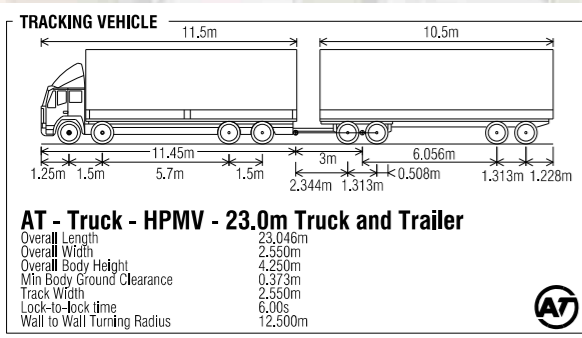
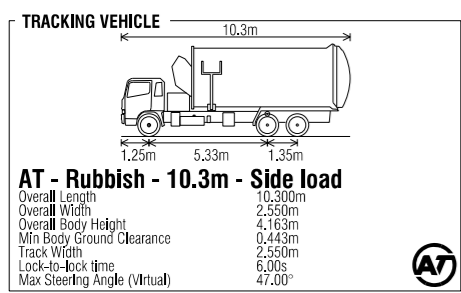
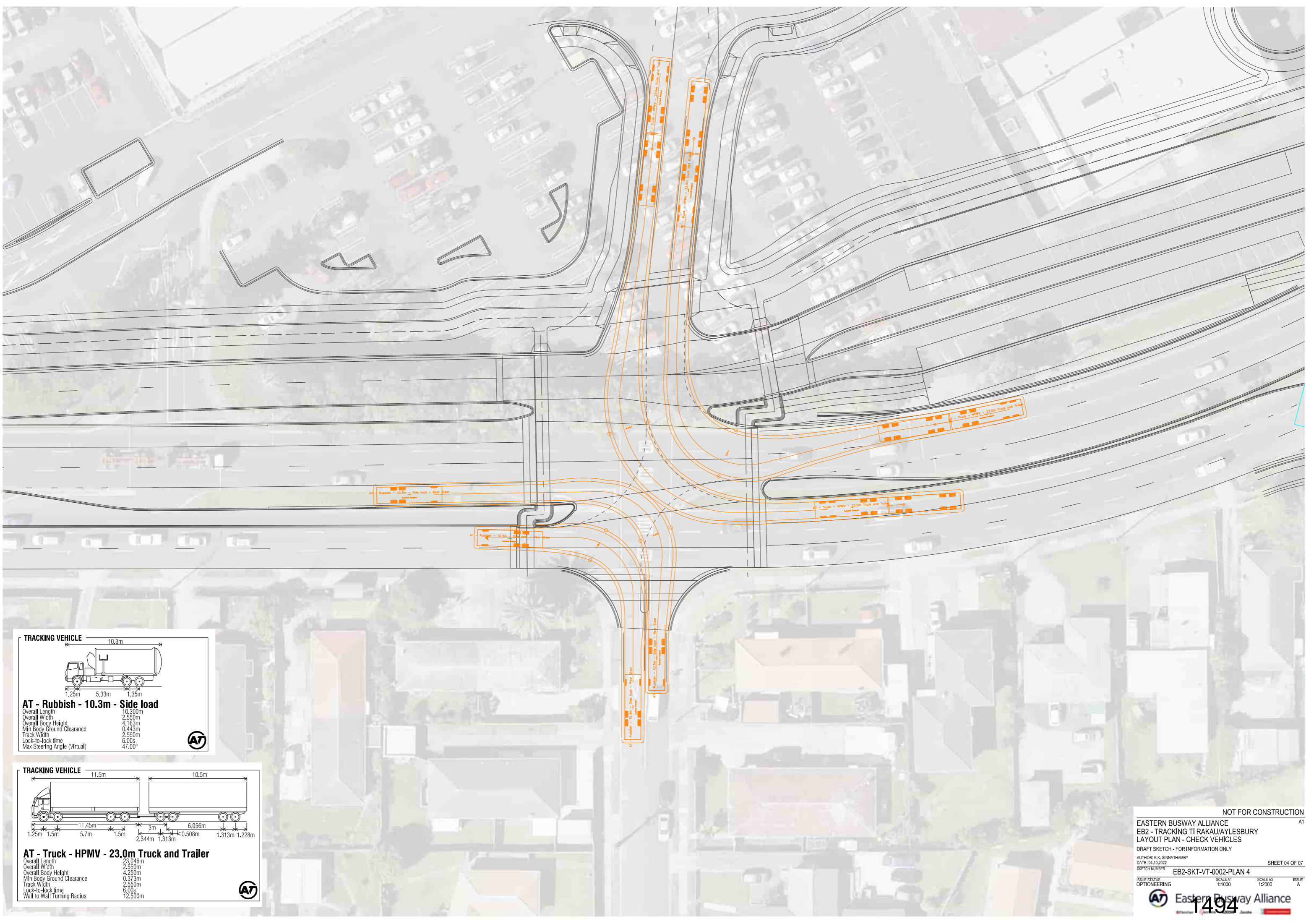
Overall Length	10.300m
Overall Width	2.550m
Overall Body Height	4.163m
Min Body Ground Clearance	0.443m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	47.00°

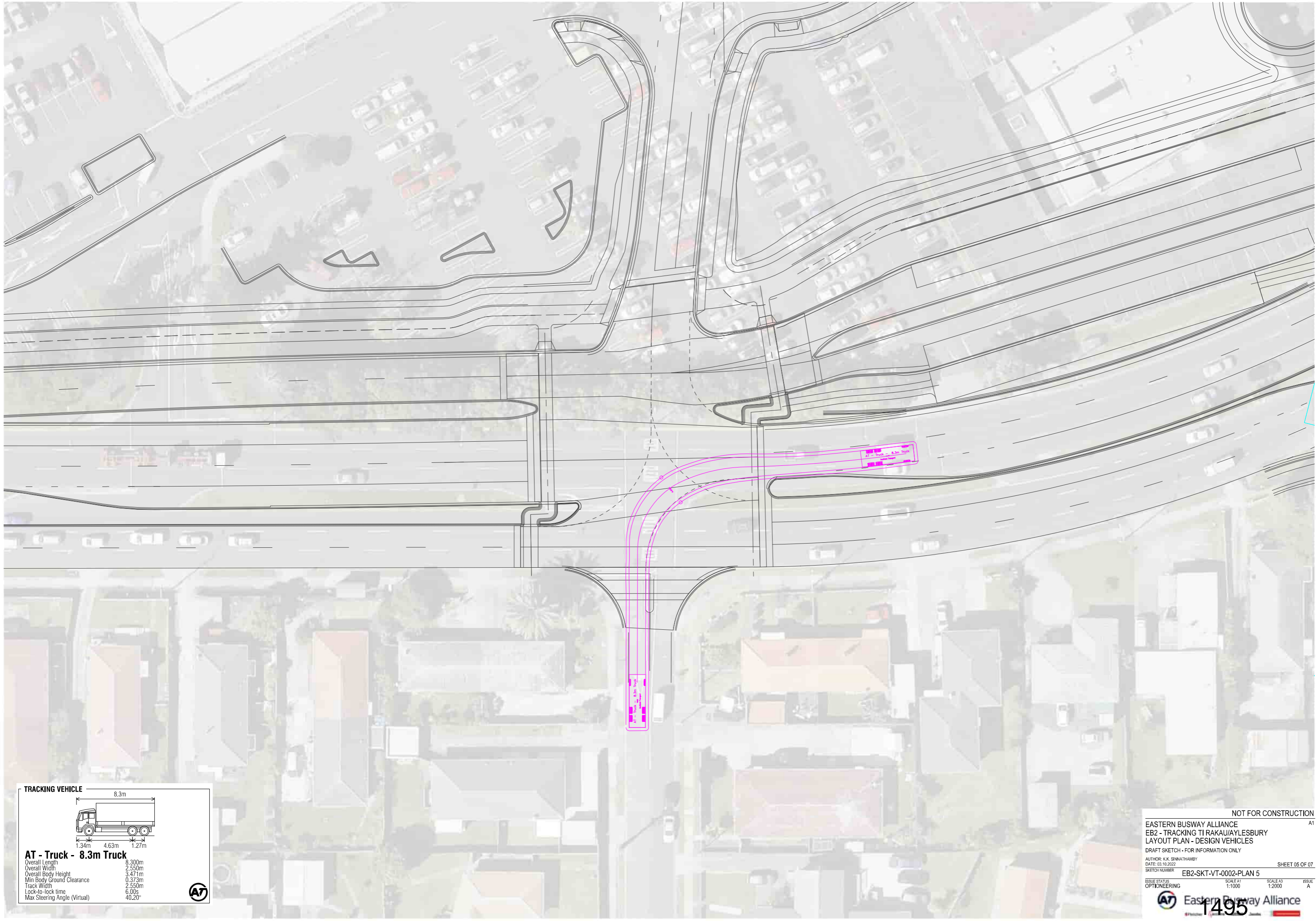
TRACKING VEHICLE

AT - Truck - HPMV - 23.0m Truck and Trailer

Overall Length	23.046m
Overall Width	2.550m
Overall Body Height	4.250m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	12.500m







TRACKING VEHICLE

AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

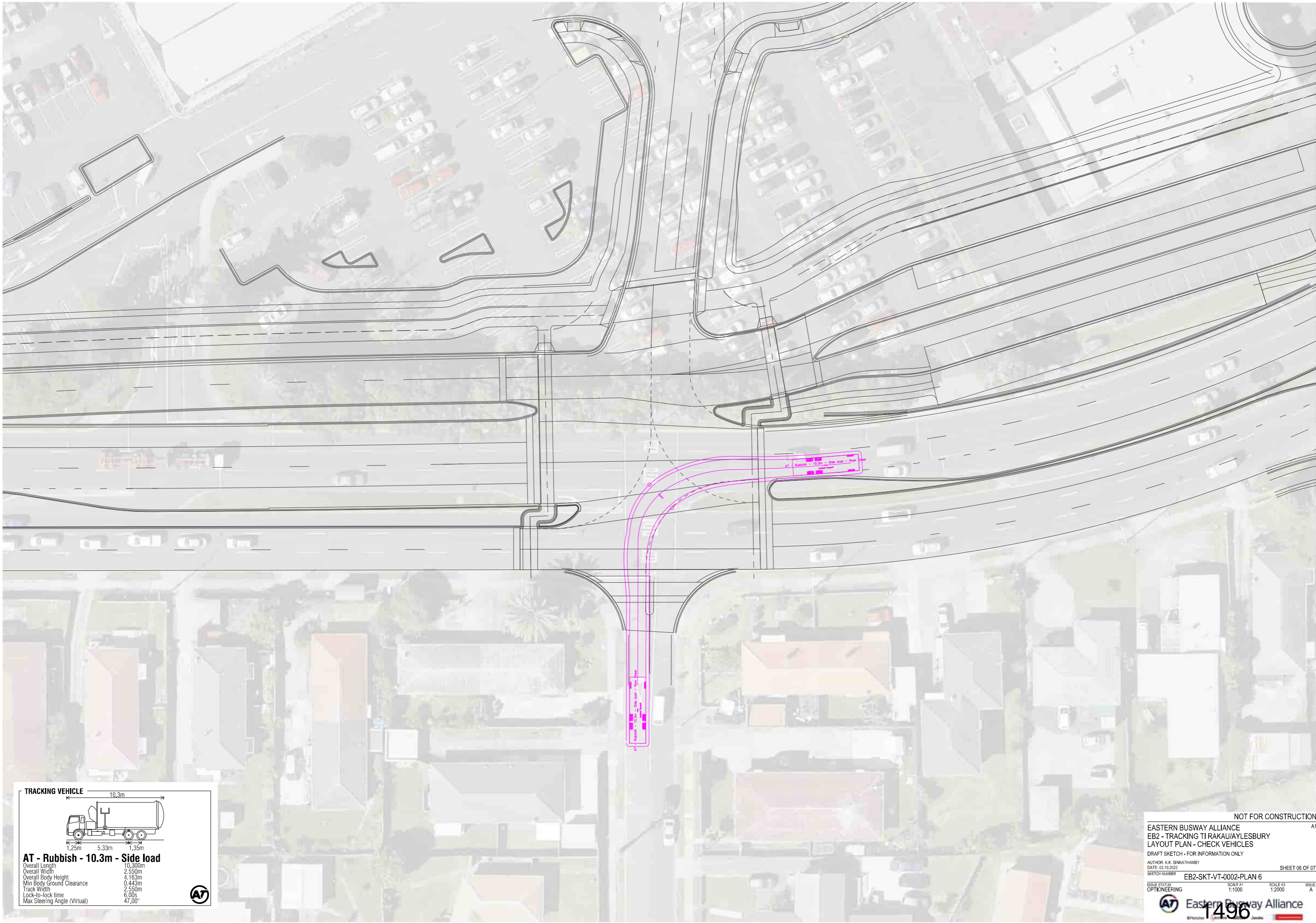
NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB2 - TRACKING TI RAKAU/AYLESBURY
LAYOUT PLAN - DESIGN VEHICLES
 DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: K.K. SINNATHAMBY
 DATE: 03.10.2022
 SKETCH NUMBER: EB2-SKT-VT-0002-PLAN 5
 ISSUE STATUS: OPTIONEERING

SHEET 05 OF 07
 SCALE A1: 1:1000
 SCALE A3: 1:2000
 ISSUE: A

1495



TRACKING VEHICLE

AT - Rubbish - 10.3m - Side load

Overall Length	10.300m
Overall Width	2.550m
Overall Body Height	4.163m
Min Body Ground Clearance	0.443m
Track Width	2.550m
Lock-to-lock time	6.06s
Max Steering Angle (Virtual)	47.00°

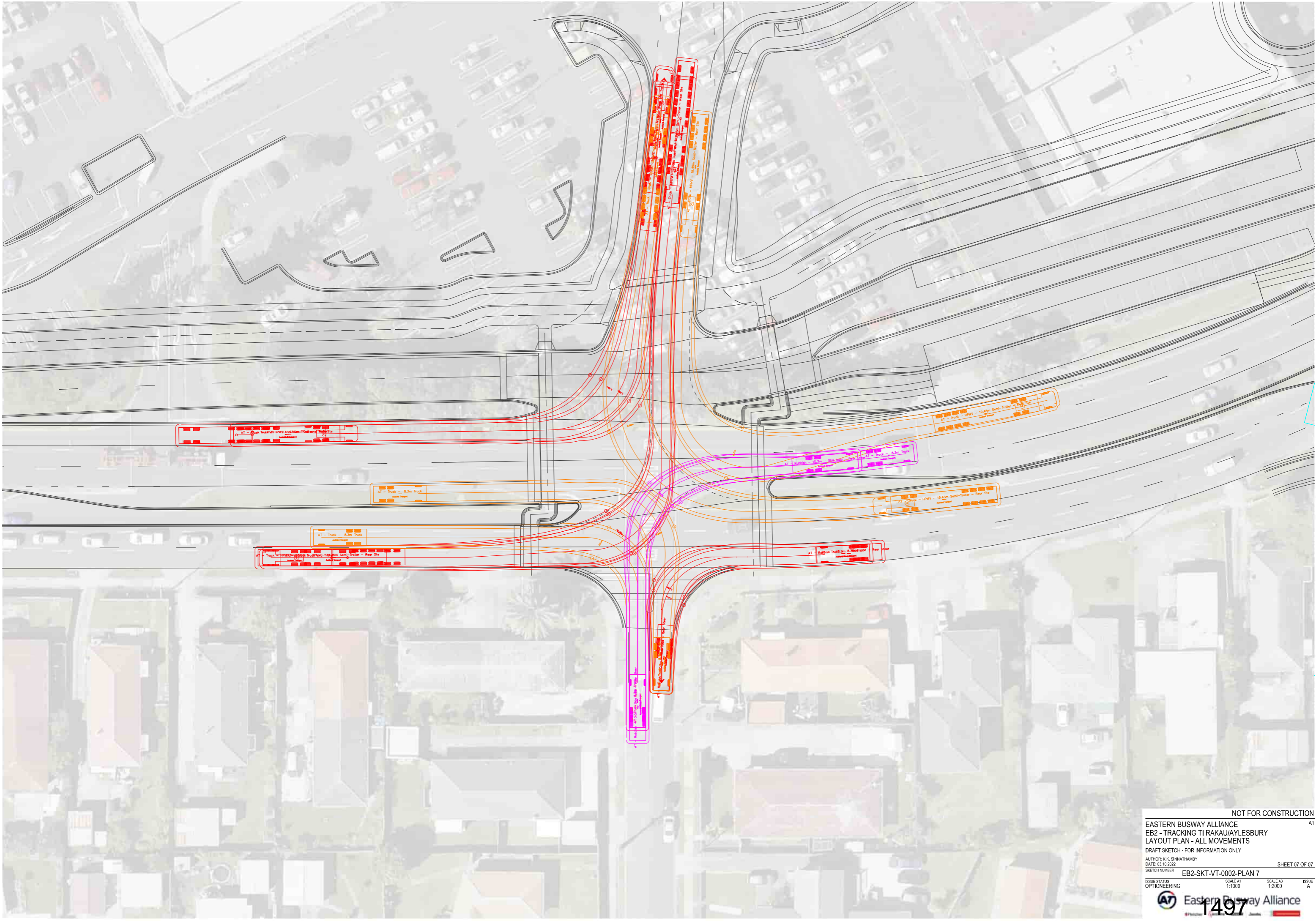
NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB2 - TRACKING TI RAKAU/AYLESBURY
LAYOUT PLAN - CHECK VEHICLES
DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: K.K. SINNATHAMBY
DATE: 03.10.2022
SKETCH NUMBER: EB2-SKT-VT-0002-PLAN 6
ISSUE STATUS: OPTONEERING

SCALE A1: 1:1000
SCALE A3: 1:2000
SCALE A: A

Eastern Busway Alliance
1496



NOT FOR CONSTRUCTION
 EASTERN BUSWAY ALLIANCE
 EB2 - TRACKING TI RAKAU/AYLESBURY
 LAYOUT PLAN - ALL MOVEMENTS
 DRAFT SKETCH - FOR INFORMATION ONLY
 AUTHOR: K.K. SINNATHAMBY
 DATE: 03.10.2022
 SKETCH NUMBER: EB2-SKT-VT-0002-PLAN 7
 SCALE A1: 1:1000
 SCALE A3: 1:2000
 SCALE A: 1:2000
 SHEET 07 OF 07
 ISSUE STATUS: OPTONEERING

TRACKING VEHICLE

AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

TRACKING VEHICLE

AT - 95th - Car

Overall Length	5.060m
Overall Width	1.923m
Overall Body Height	1.784m
Min Body Ground Clearance	0.231m
Max Track Width	1.888m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.450m

**KISS AND RIDE LAYOUT
SUBJECT TO CHANGE**

TRACKING VEHICLE

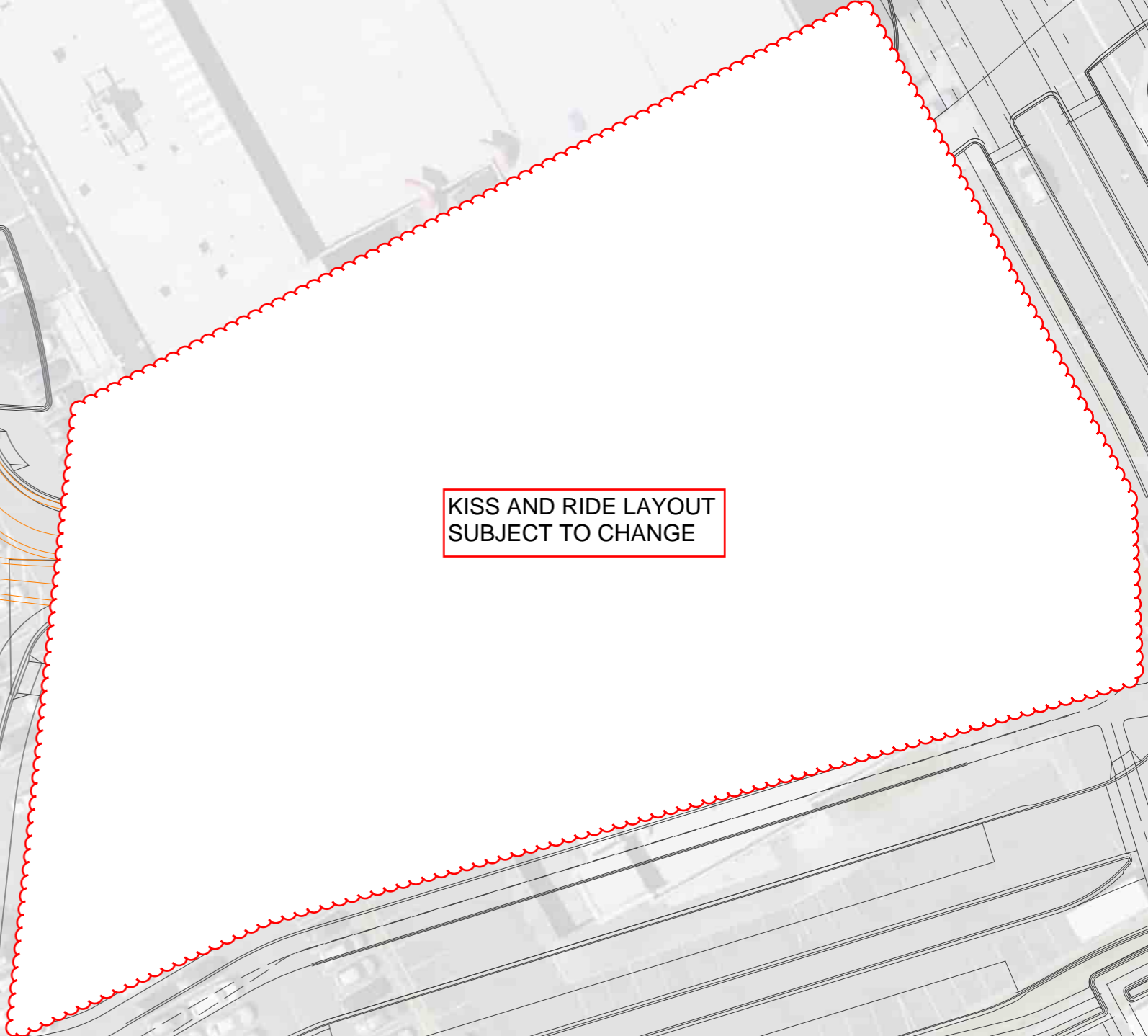
AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

TRACKING VEHICLE

AT - 95th - Car

Overall Length	5.060m
Overall Width	1.923m
Overall Body Height	1.784m
Min Body Ground Clearance	0.231m
Max Track Width	1.888m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.450m

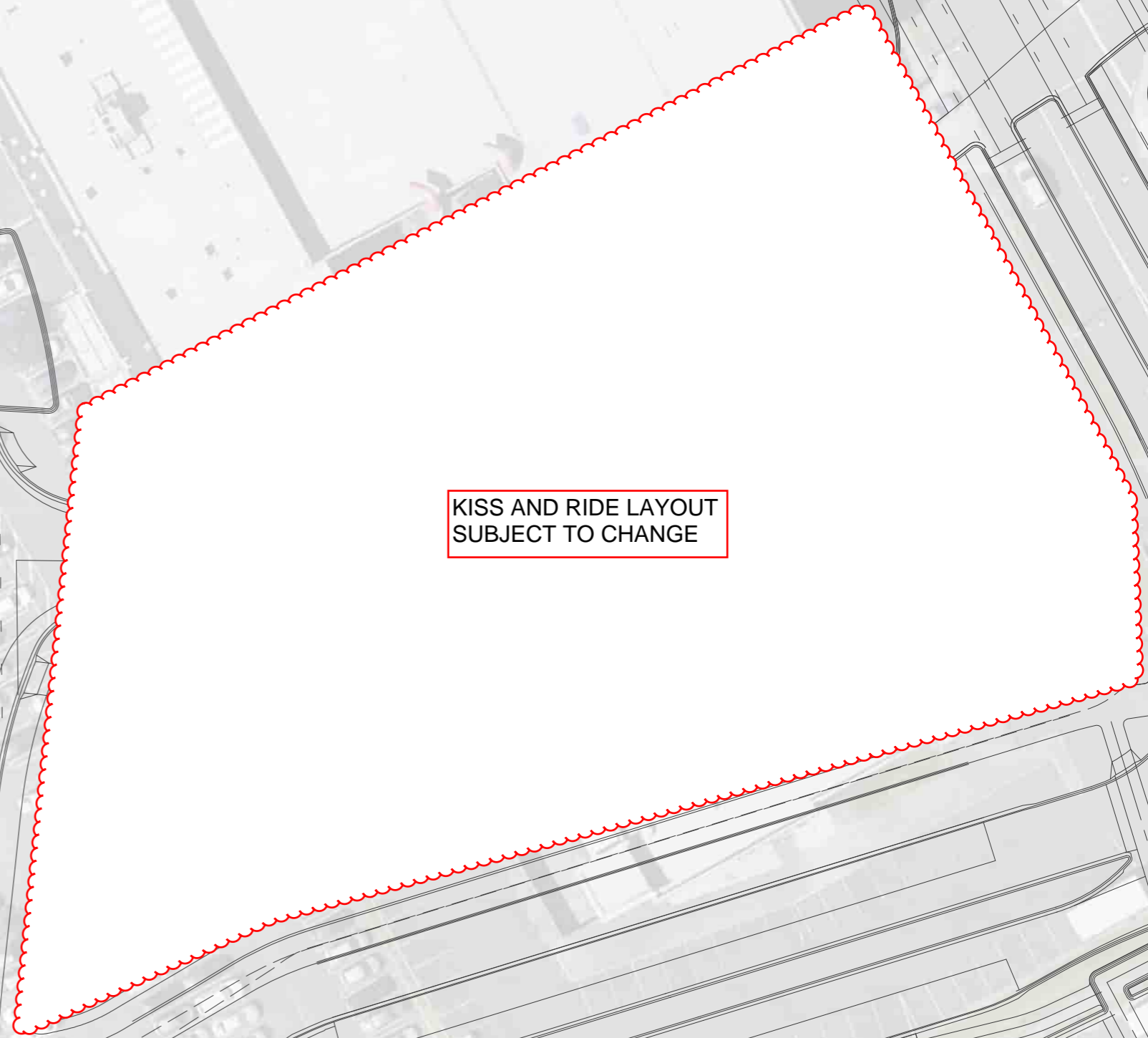


**KISS AND RIDE LAYOUT
SUBJECT TO CHANGE**

TRACKING VEHICLE

AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°



**KISS AND RIDE LAYOUT
SUBJECT TO CHANGE**



NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB2 - TRACKING CORTINA/AYLESBURY
LAYOUT PLAN - DESIGN VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY
AUTHOR: K.K. SINNATHAMBY
DATE: 03.10.2022
SHEET 03 OF 05

SKETCH NUMBER: EB2-SKT-VT-0003-PLAN 3
ISSUE STATUS: OPTONEERING
SCALE A1: 1:1000
SCALE A3: 1:2000
ISSUE: A

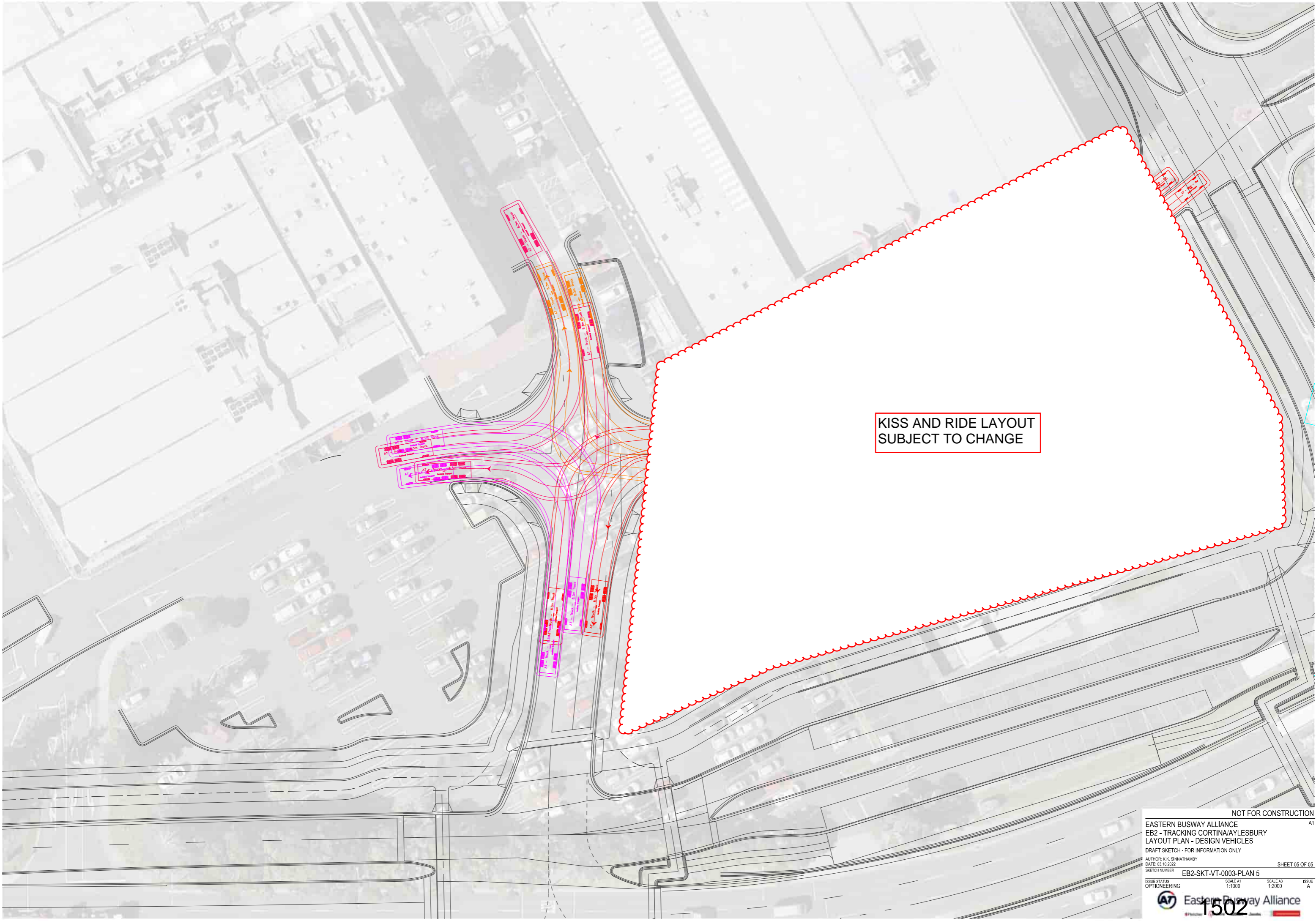
TRACKING VEHICLE

AT - Truck - 8.3m Truck

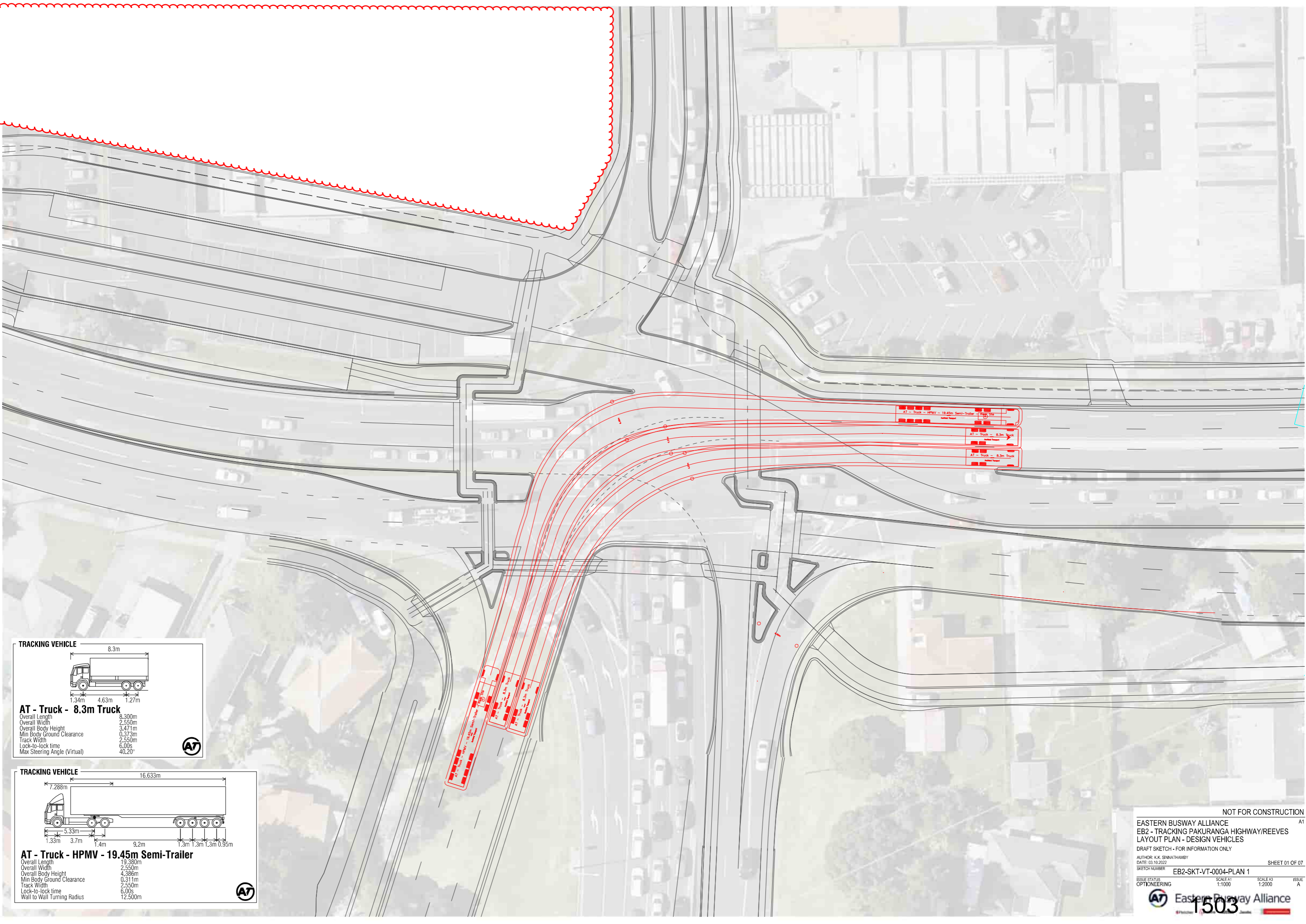
Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°



**KISS AND RIDE LAYOUT
SUBJECT TO CHANGE**



KISS AND RIDE LAYOUT
SUBJECT TO CHANGE



TRACKING VEHICLE

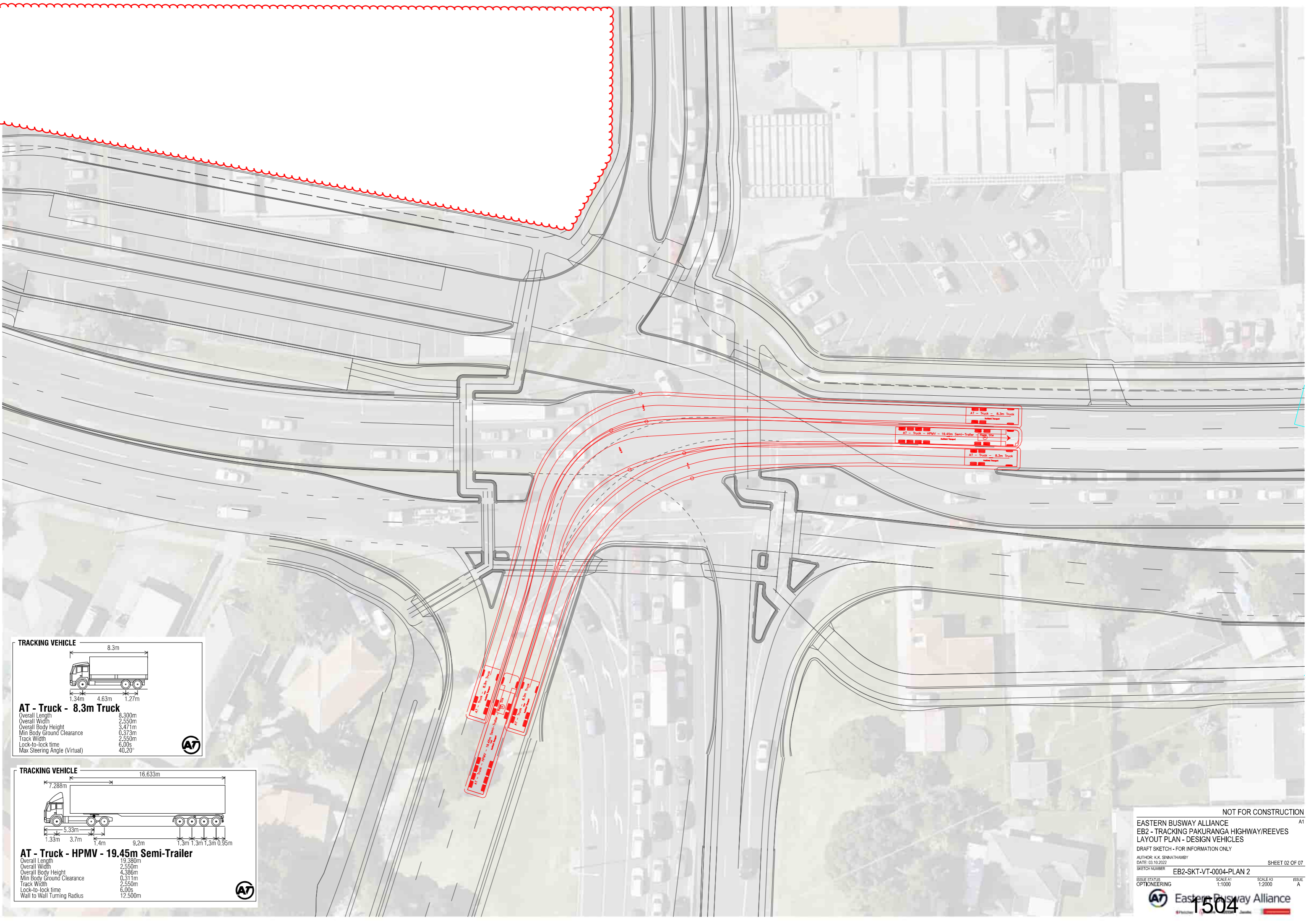
AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

TRACKING VEHICLE

AT - Truck - HPMV - 19.45m Semi-Trailer

Overall Length	19.380m
Overall Width	2.550m
Overall Body Height	4.386m
Min Body Ground Clearance	0.311m
Track Width	2.550m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	12.500m



TRACKING VEHICLE

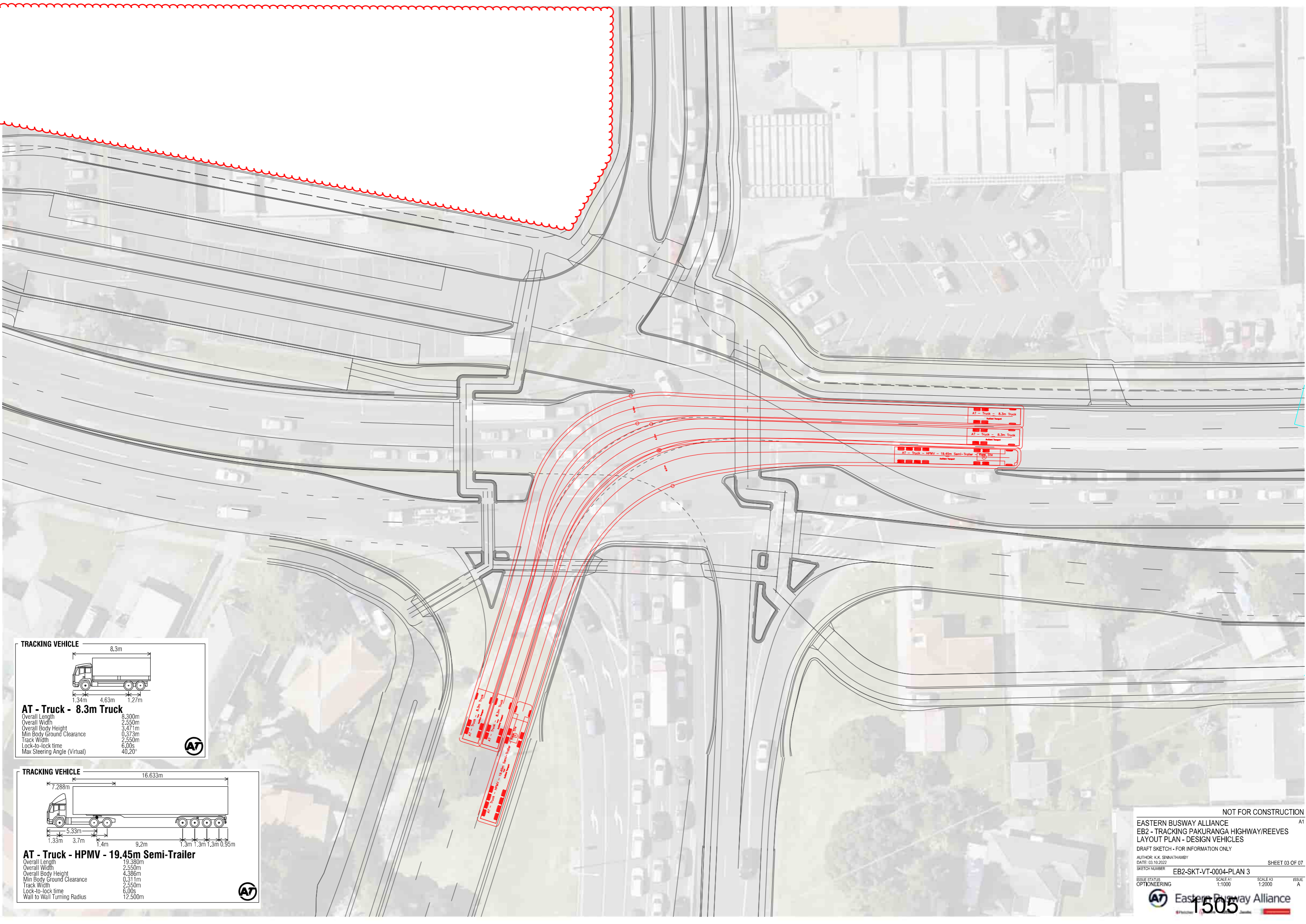
AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

TRACKING VEHICLE

AT - Truck - HPMV - 19.45m Semi-Trailer

Overall Length	19.380m
Overall Width	2.550m
Overall Body Height	4.386m
Min Body Ground Clearance	0.311m
Track Width	2.550m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	12.500m



TRACKING VEHICLE

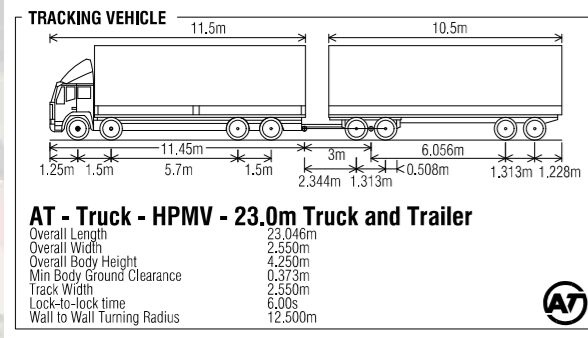
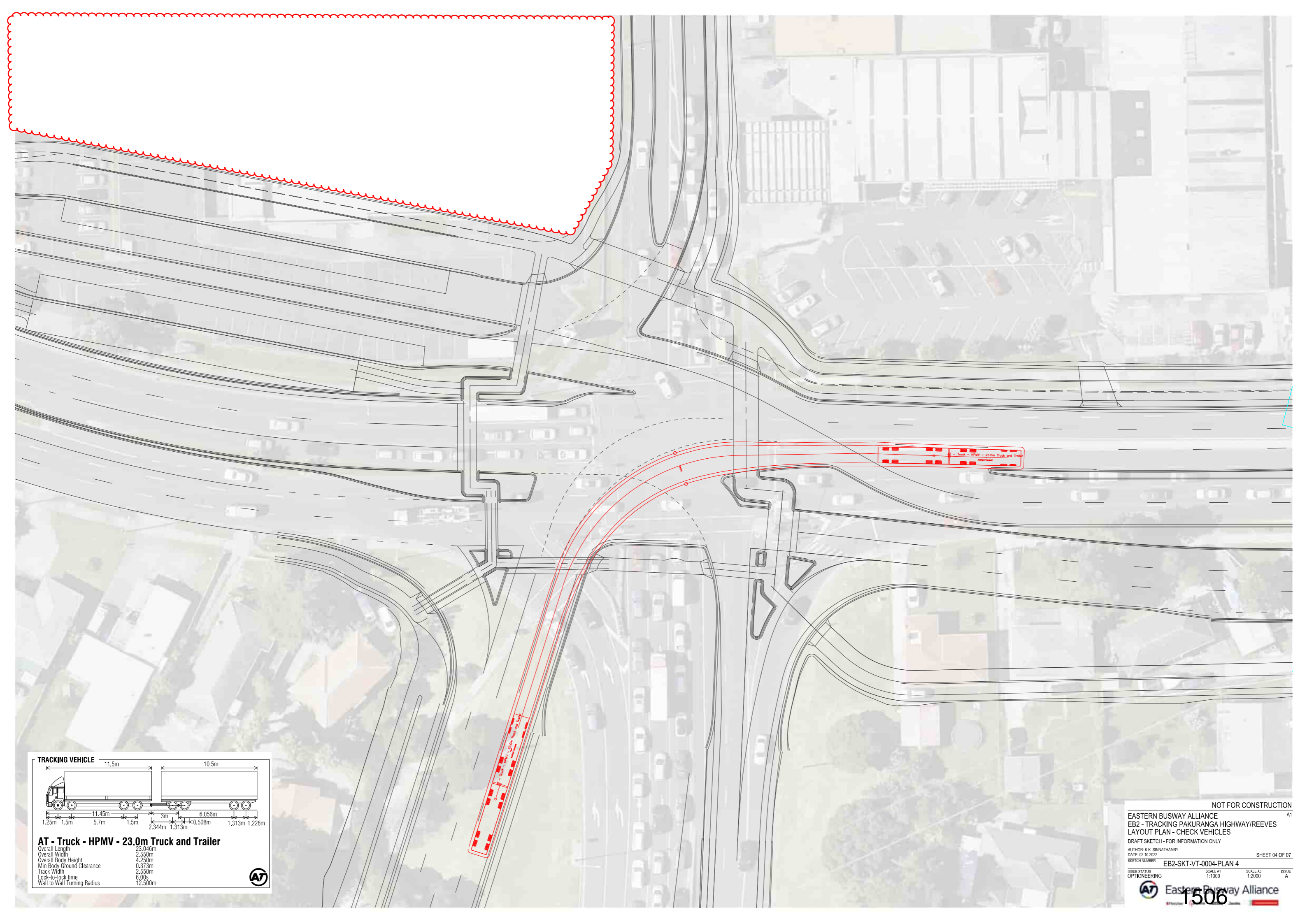
AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

TRACKING VEHICLE

AT - Truck - HPMV - 19.45m Semi-Trailer

Overall Length	19.380m
Overall Width	2.550m
Overall Body Height	4.386m
Min Body Ground Clearance	0.311m
Track Width	2.550m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	12.500m



NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB2 - TRACKING PAKURANGA HIGHWAY/REEVES
LAYOUT PLAN - CHECK VEHICLES
 DRAFT SKETCH - FOR INFORMATION ONLY

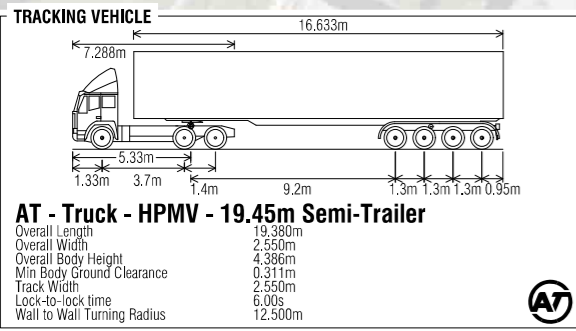
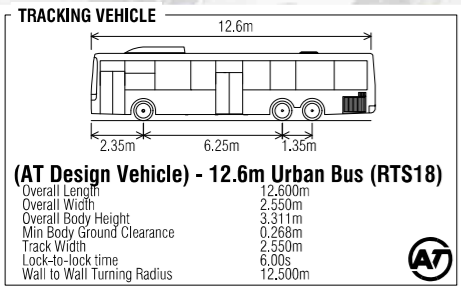
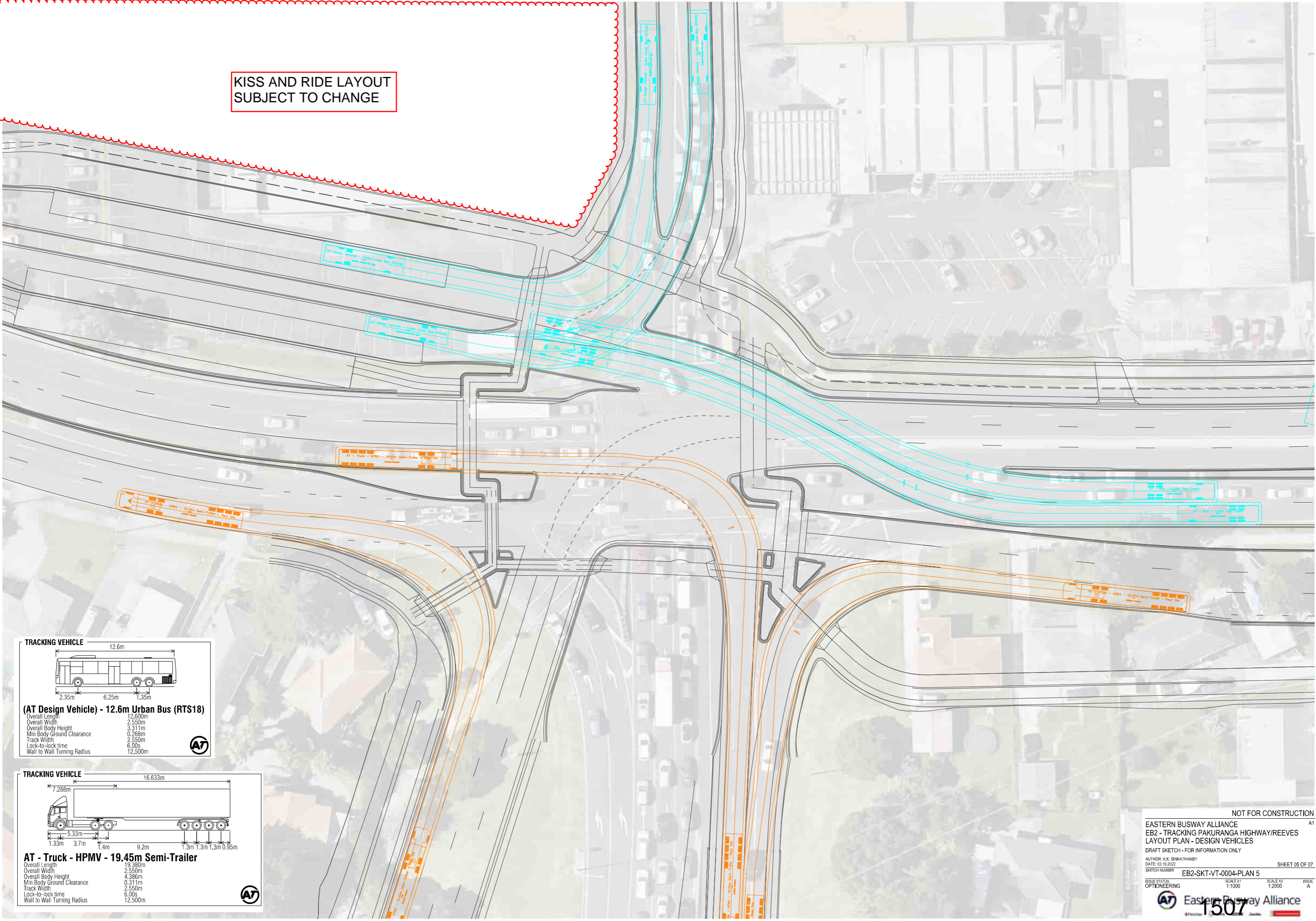
AUTHOR: K.K. SINNATHAMBY
 DATE: 03.10.2022
 SHEET 04 OF 07

SKETCH NUMBER: **EB2-SKT-VT-0004-PLAN 4**

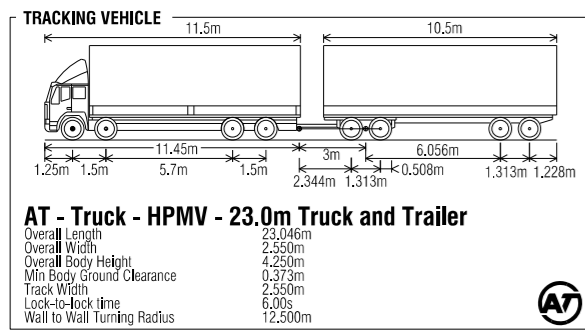
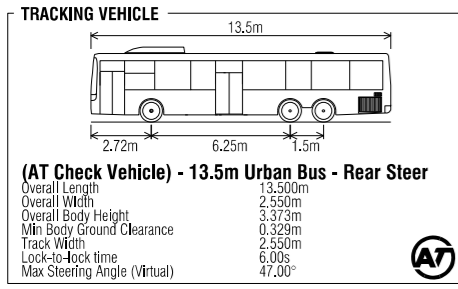
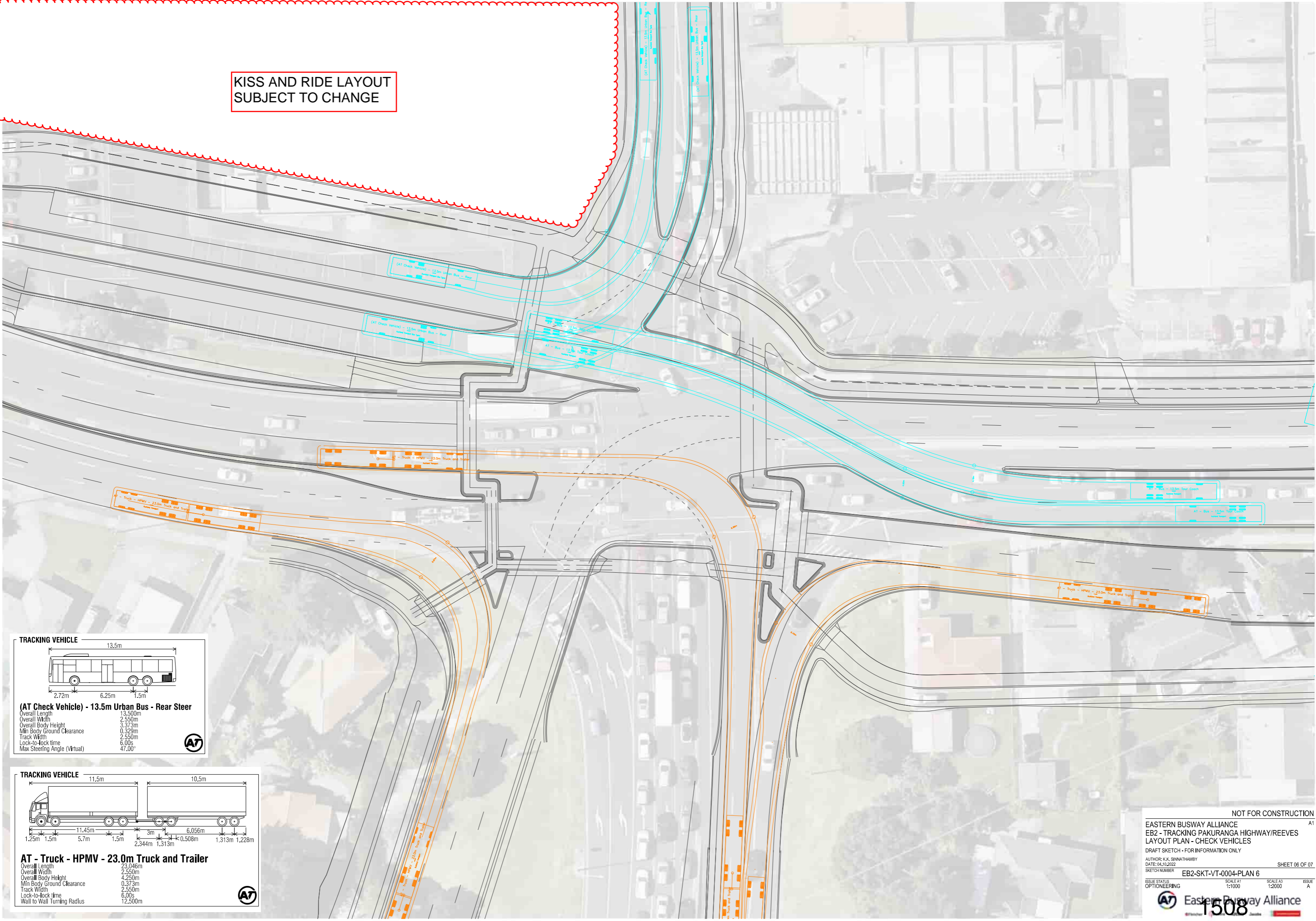
ISSUE STATUS: OPTONEERING
 SCALE A1: 1:1000
 SCALE A3: 1:2000
 ISSUE: A

Eastern Busway Alliance
1506

**KISS AND RIDE LAYOUT
SUBJECT TO CHANGE**



**KISS AND RIDE LAYOUT
SUBJECT TO CHANGE**



KISS AND RIDE LAYOUT
SUBJECT TO CHANGE

NOT FOR CONSTRUCTION

EASTERN BUSWAY ALLIANCE
EB2 - TRACKING PAKURANGA HIGHWAY/REEVES
LAYOUT PLAN - ALL MOVEMENTS

DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: K.K. SINNATHAMBY

DATE: 03.10.2022

SKETCH NUMBER: EB2-SKT-VT-0004-PLAN 7

SHEET 07 OF 07

ISSUE STATUS: OPTONEERING

SCALE A1: 1:1000

SCALE A3: 1:2000

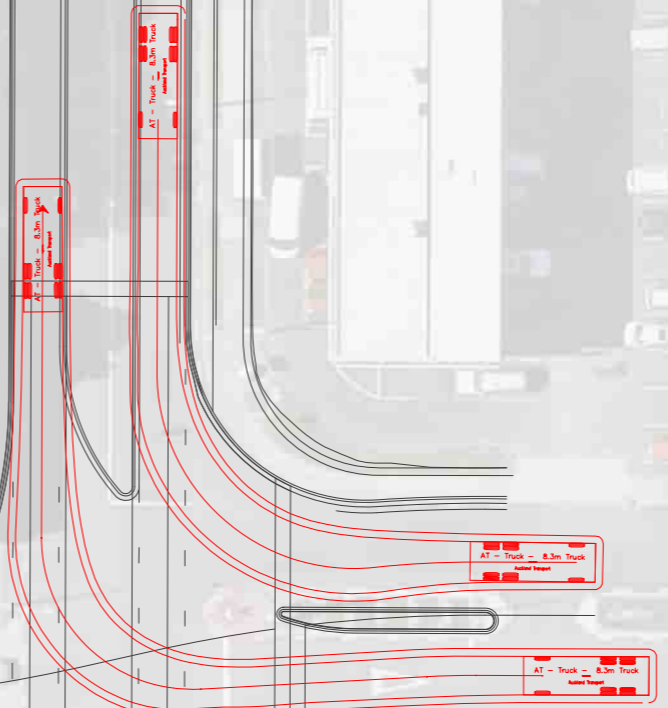
ISSUE: A

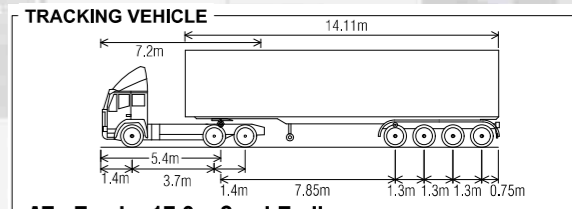
TRACKING VEHICLE

AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

**KISS AND RIDE LAYOUT
SUBJECT TO CHANGE**





AT - Truck - 17.9m Semi-Trailer

Overall Length	17.90m
Overall Width	2.550m
Overall Body Height	4.371m
Min Body Ground Clearance	0.311m
Track Width	2.550m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	12.500m



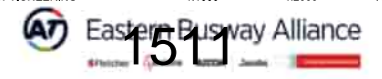
Adjust median island to suit tracking

KISS AND RIDE LAYOUT SUBJECT TO CHANGE

NOT FOR CONSTRUCTION

EASTERN BUSWAY ALLIANCE
 EB2 - TRACKING CORTINA/REEVES
 LAYOUT PLAN - CHECK VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY
 AUTHOR: K.K. SINNATHAMBY
 DATE: 03.10.2022
 SKETCH NUMBER: EB2-SKT-VT-0005-PLAN 2
 ISSUE STATUS: OPTONEERING
 SCALE A1: 1:1000
 SCALE A3: 1:2000
 SCALE A: 1:2000



15 LU

TRACKING VEHICLE

AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

**KISS AND RIDE LAYOUT
SUBJECT TO CHANGE**

NOT FOR CONSTRUCTION

EASTERN BUSWAY ALLIANCE
EB2 - TRACKING CORTINA/REEVES
LAYOUT PLAN - DESIGN VEHICLES
DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: K.K. SINNATHAMBY
DATE: 03.10.2022
SKETCH NUMBER: EB2-SKT-VT-0005-PLAN 3

ISSUE STATUS: OPTONEERING
SCALE A1: 1:1000
SCALE A3: 1:2000
SCALE A: A

SHEET 03 OF 05

TRACKING VEHICLE

AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

TRACKING VEHICLE

AT - Truck - 12.6m - No hitch

Overall Length	12.600m
Overall Width	2.550m
Overall Body Height	4.243m
Min Body Ground Clearance	0.385m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Wheel Angle	49.00°

KISS AND RIDE LAYOUT
SUBJECT TO CHANGE

NOT FOR CONSTRUCTION

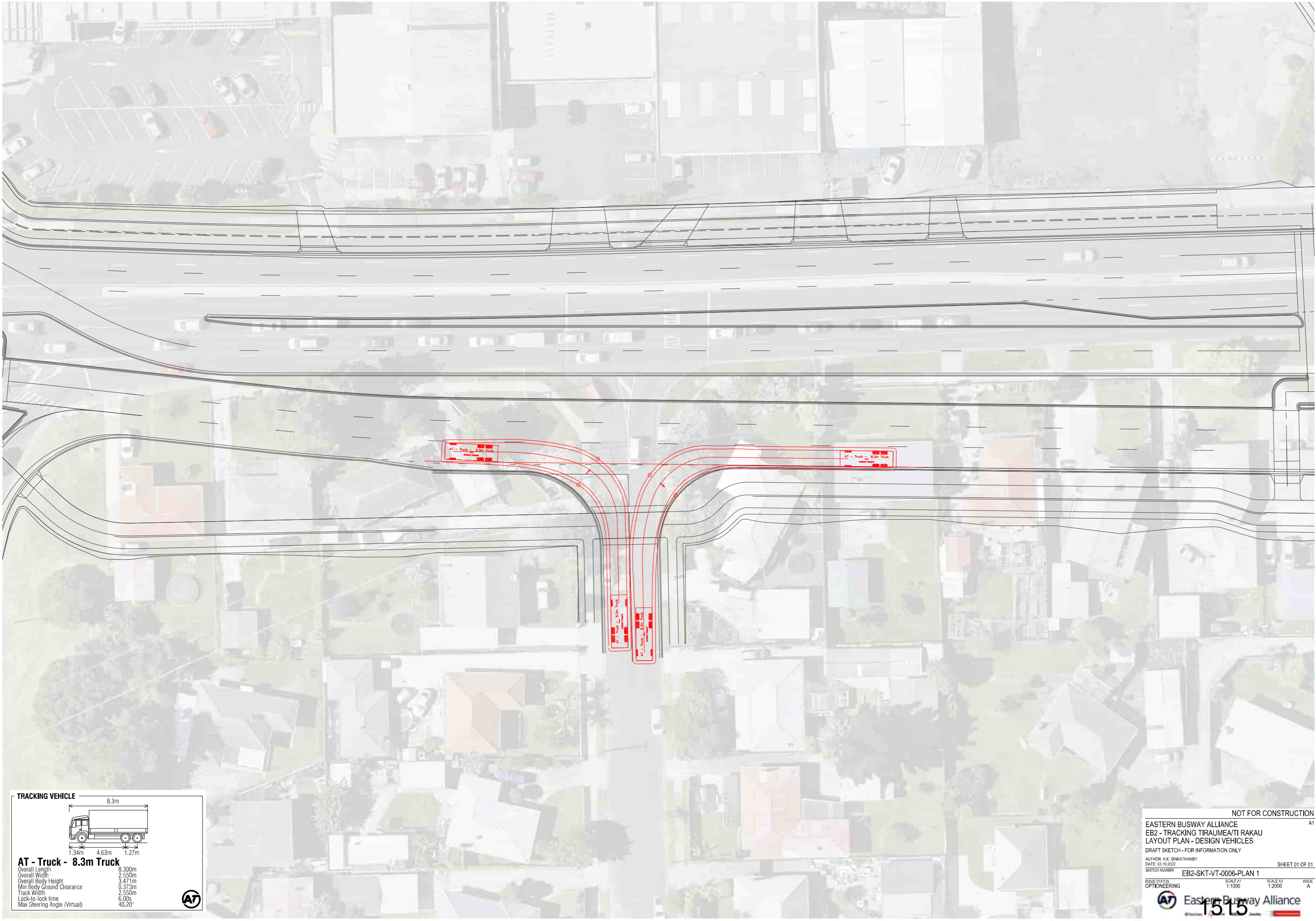
EASTERN BUSWAY ALLIANCE
EB2 - TRACKING CORTINA/REEVES
LAYOUT PLAN - CHECK VEHICLES
DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: K.K. SINNATHAMBY
DATE: 03.10.2022
SKETCH NUMBER: EB2-SKT-VT-0005-PLAN 4

ISSUE STATUS: OPTONEERING
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SCALE A3: 1:2000
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KISS AND RIDE LAYOUT
SUBJECT TO CHANGE

NOT FOR CONSTRUCTION
A1
EASTERN BUSWAY ALLIANCE
EB2 - TRACKING CORTINA/REEVES
LAYOUT PLAN - CHECK VEHICLES
DRAFT SKETCH - FOR INFORMATION ONLY
AUTHOR: K.K. SINNATHAMBY
DATE: 03.10.2022
SHEET 05 OF 05
SKETCH NUMBER: EB2-SKT-VT-0005-PLAN 5
ISSUE STATUS: SCALE A1 1:1000 SCALE A3 1:2000
OPTONEERING A



TRACKING VEHICLE

AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.30s
Max Steering Angle (Virtual)	40.20°

NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB2 - TRACKING TIRAUMEATI RAKAU
LAYOUT PLAN - DESIGN VEHICLES
 DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: K.K. SINNATHAMBY
 DATE: 03.10.2022
 SHEET 01 OF 01

SKETCH NUMBER: **EB2-SKT-VT-0006-PLAN 1**

ISSUE STATUS: OPTONEERING

SCALE A1: 1:1000
 SCALE A3: 1:2000
 SCALE A: A

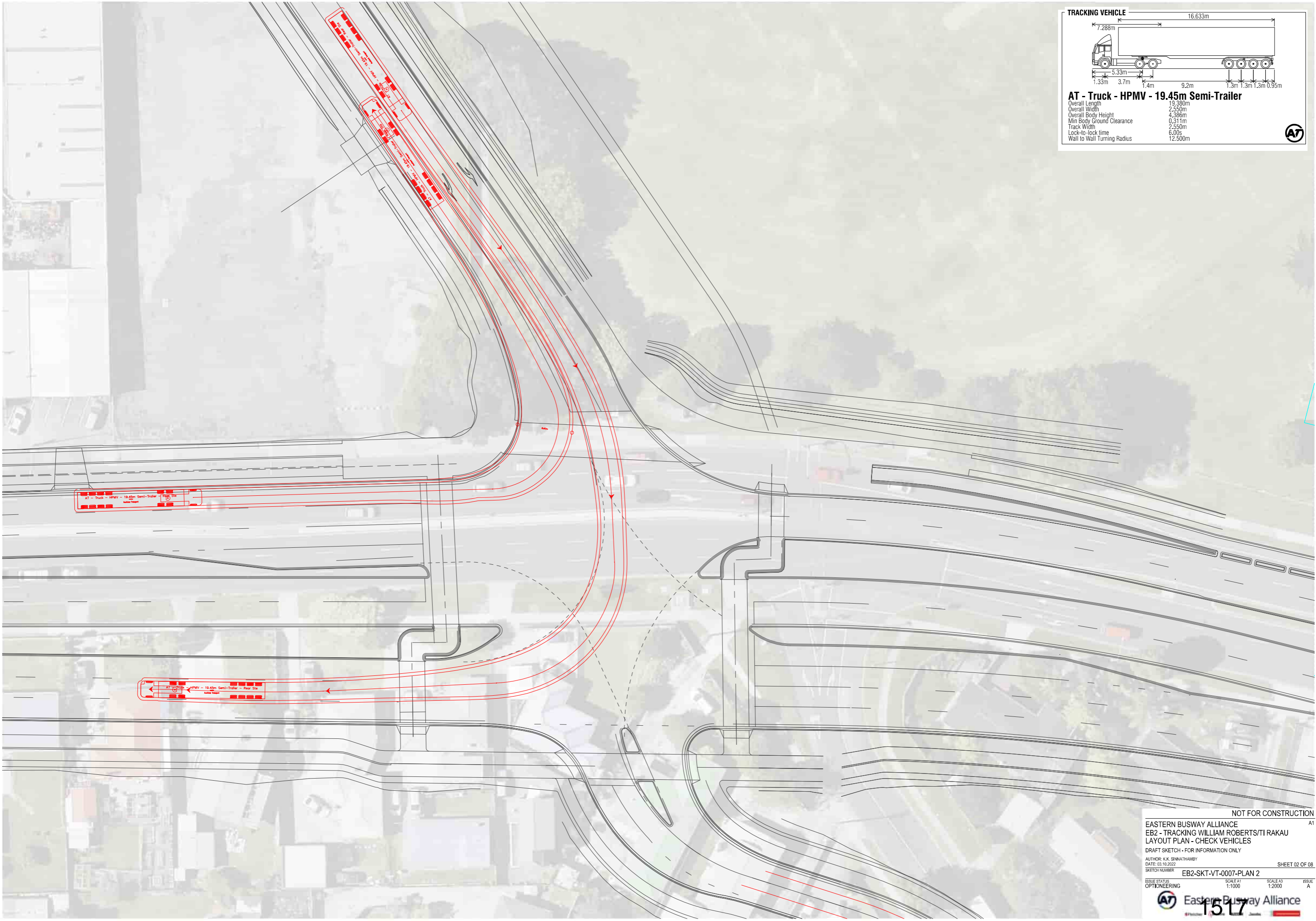
1515

TRACKING VEHICLE

AT - Truck - 12.6m - No hitch

Overall Length	12.600m
Overall Width	2.550m
Overall Body Height	4.249m
Min Body Ground Clearance	0.385m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Wheel Angle	49.00°





TRACKING VEHICLE

AT - Truck - HPMV - 19.45m Semi-Trailer

Overall Length	19.380m
Overall Width	2.550m
Overall Body Height	4.386m
Min Body Ground Clearance	0.311m
Track Width	2.550m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	12.500m

AT - Truck - HPMV - 19.45m Semi-Trailer - Front View

AT - Truck - HPMV - 19.45m Semi-Trailer - Rear View



TRACKING VEHICLE

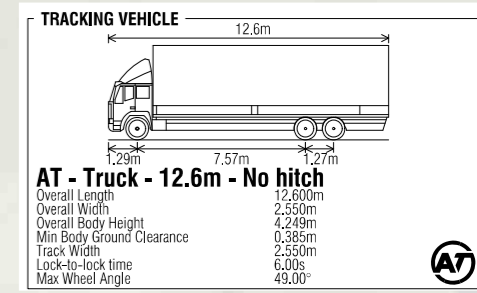
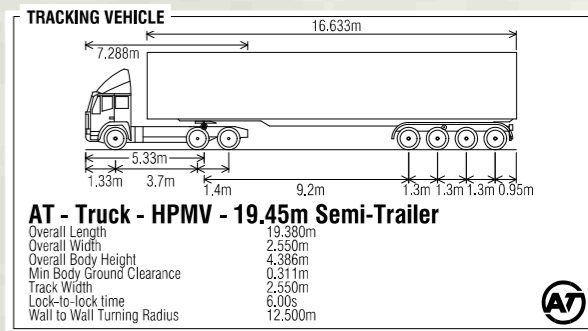
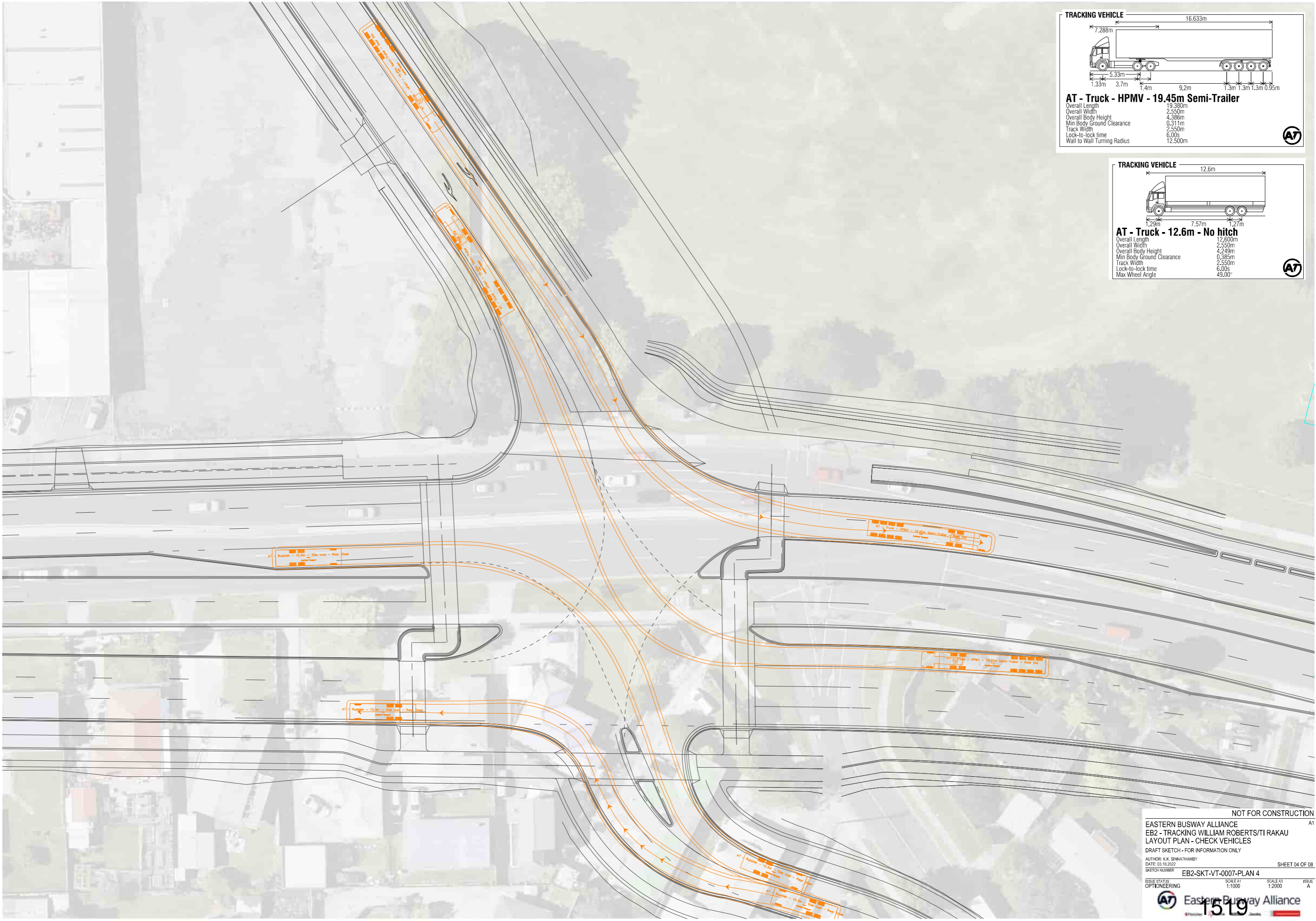
AT - Truck - 12.6m - No hitch

Overall Length	12.600m
Overall Width	2.550m
Overall Body Height	4.249m
Min Body Ground Clearance	0.385m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Wheel Angle	49.00°

TRACKING VEHICLE

AT - Truck - 8.3m Truck

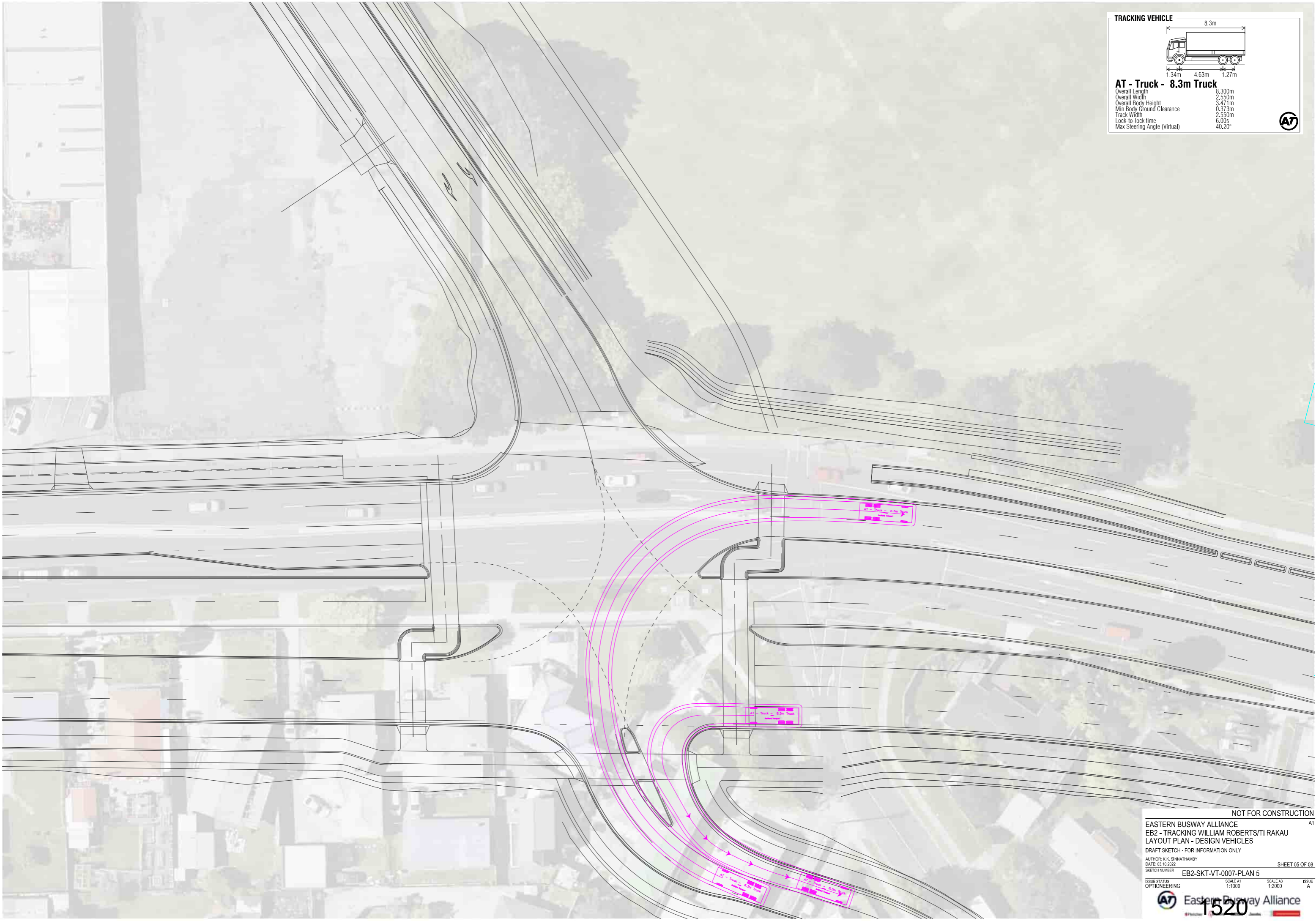
Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°



TRACKING VEHICLE

AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°



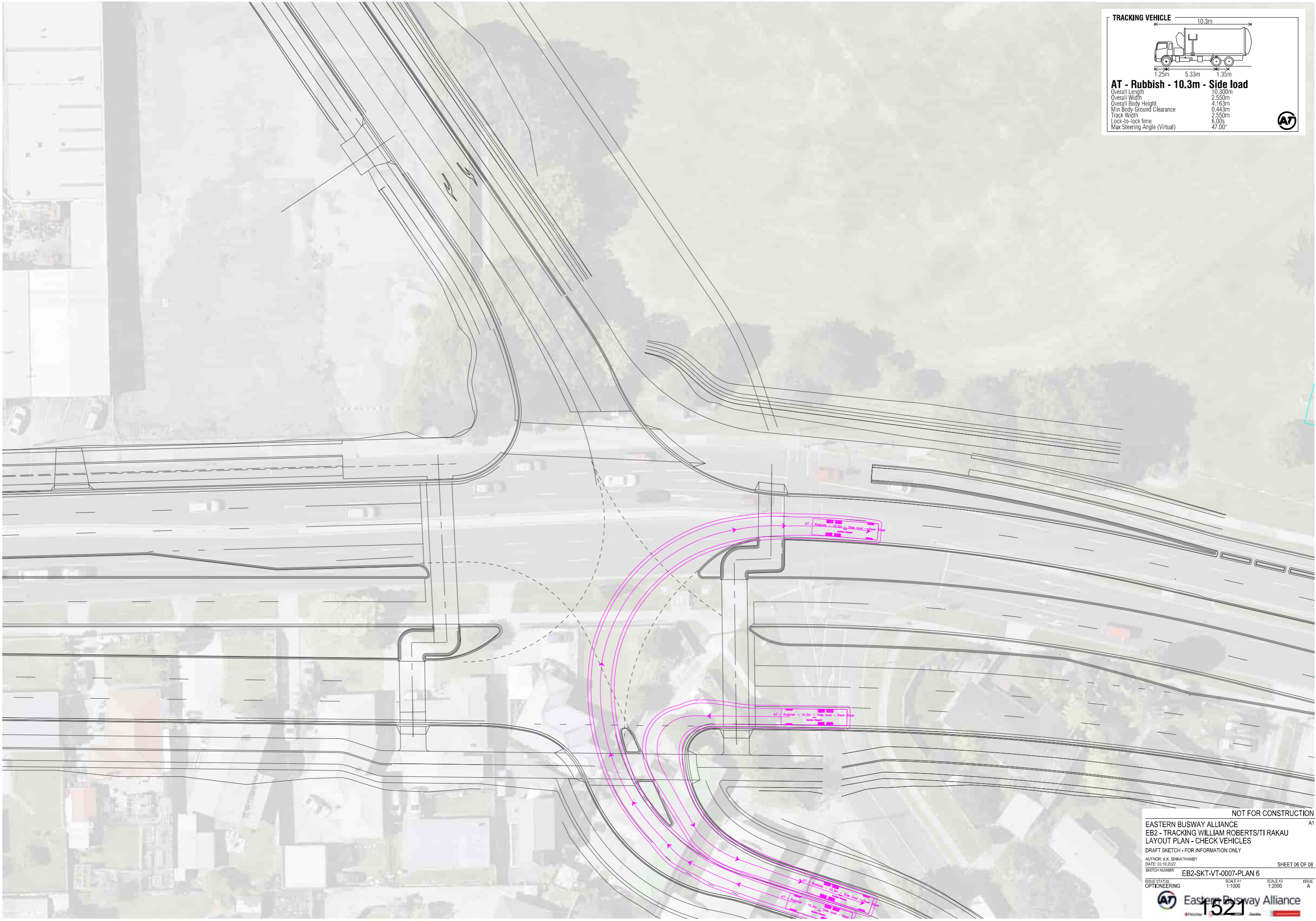
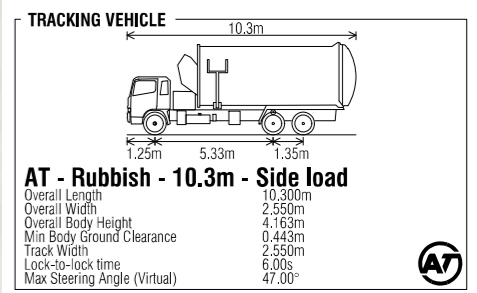
NOT FOR CONSTRUCTION

EASTERN BUSWAY ALLIANCE
 EB2 - TRACKING WILLIAM ROBERTS/TI RAKAU
 LAYOUT PLAN - DESIGN VEHICLES
 DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: K.K. SINNATHAMBY
 DATE: 03.10.2022
 SKETCH NUMBER: EB2-SKT-VT-0007-PLAN 5

ISSUE STATUS: OPTONEERING
 SCALE A1: 1:1000
 SCALE A3: 1:2000
 SHEET 05 OF 08
 ISSUE: A

Eastern Busway Alliance
 1520



NOT FOR CONSTRUCTION

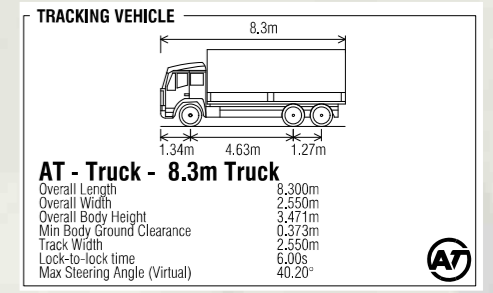
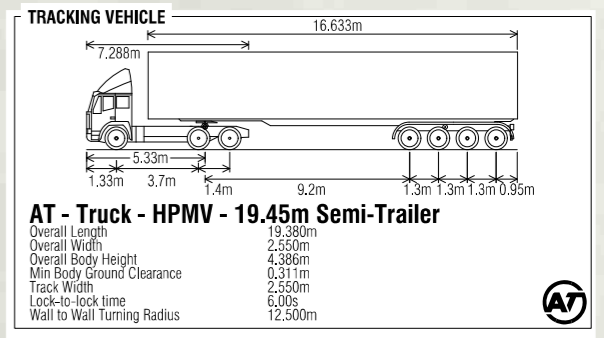
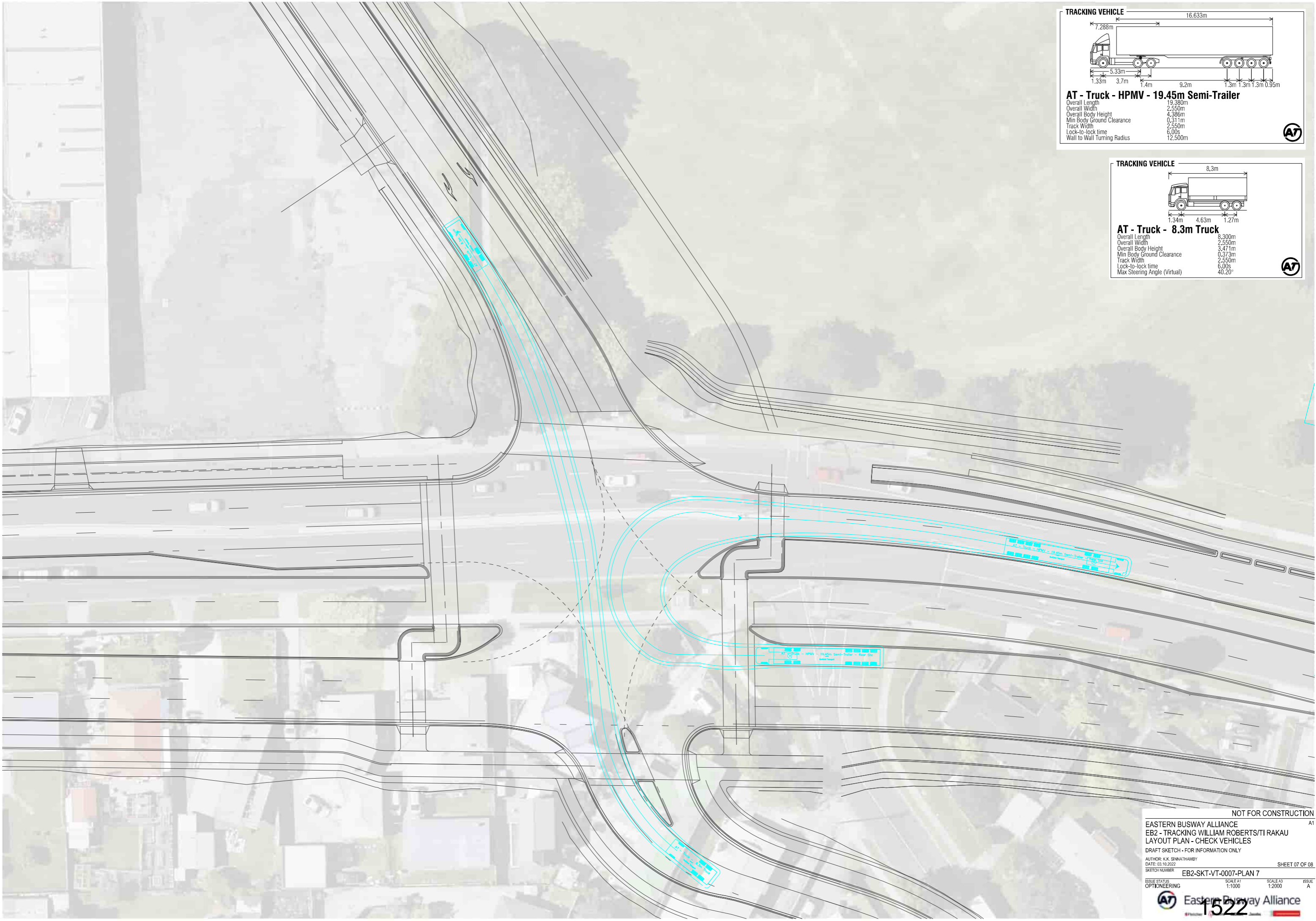
EASTERN BUSWAY ALLIANCE
 EB2 - TRACKING WILLIAM ROBERTS/TI RAKAU
 LAYOUT PLAN - CHECK VEHICLES
 DRAFT SKETCH - FOR INFORMATION ONLY

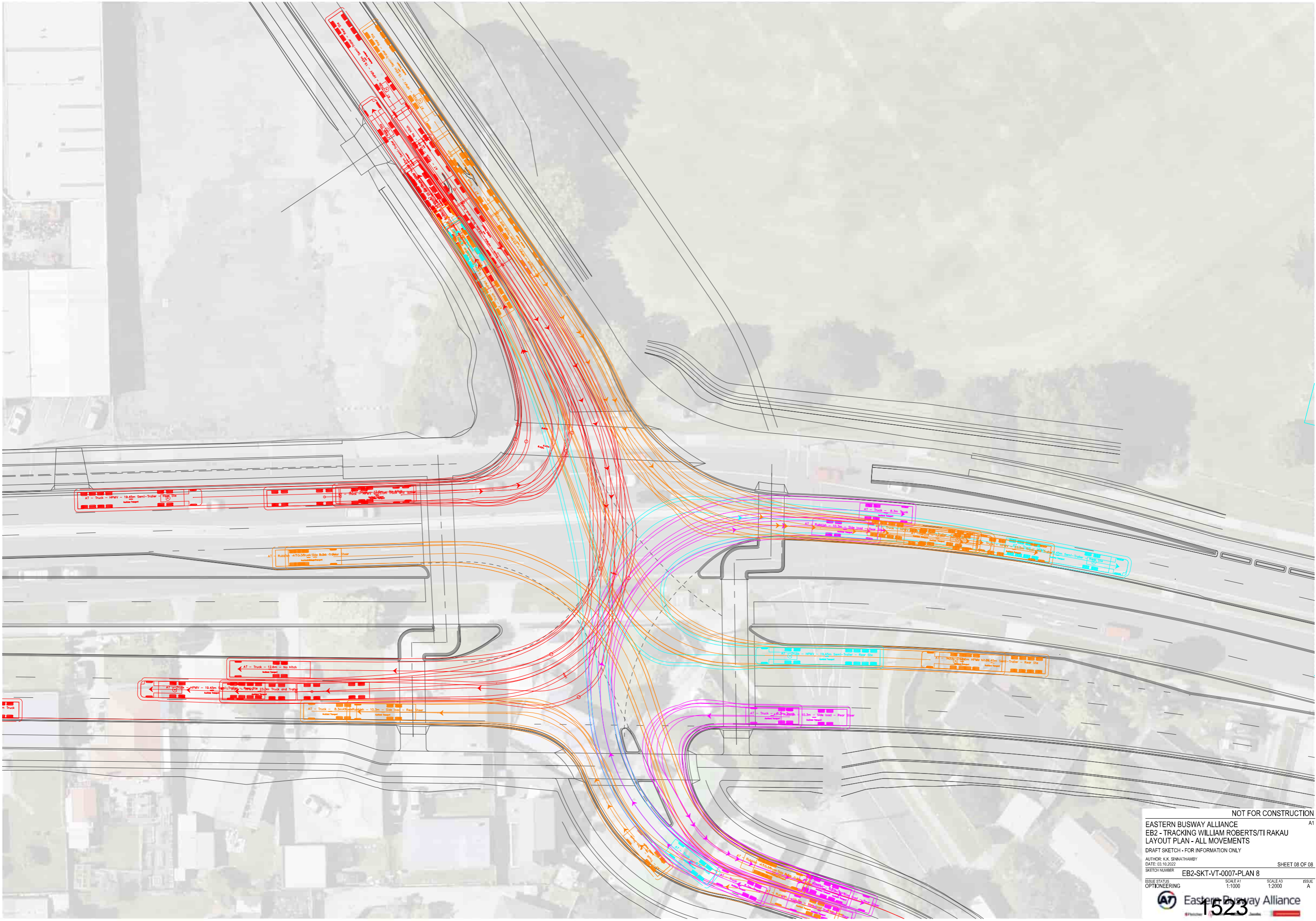
AUTHOR: K.K. SINNATHAMBY
 DATE: 03.10.2022
 SKETCH NUMBER: EB2-SKT-VT-0007-PLAN 6

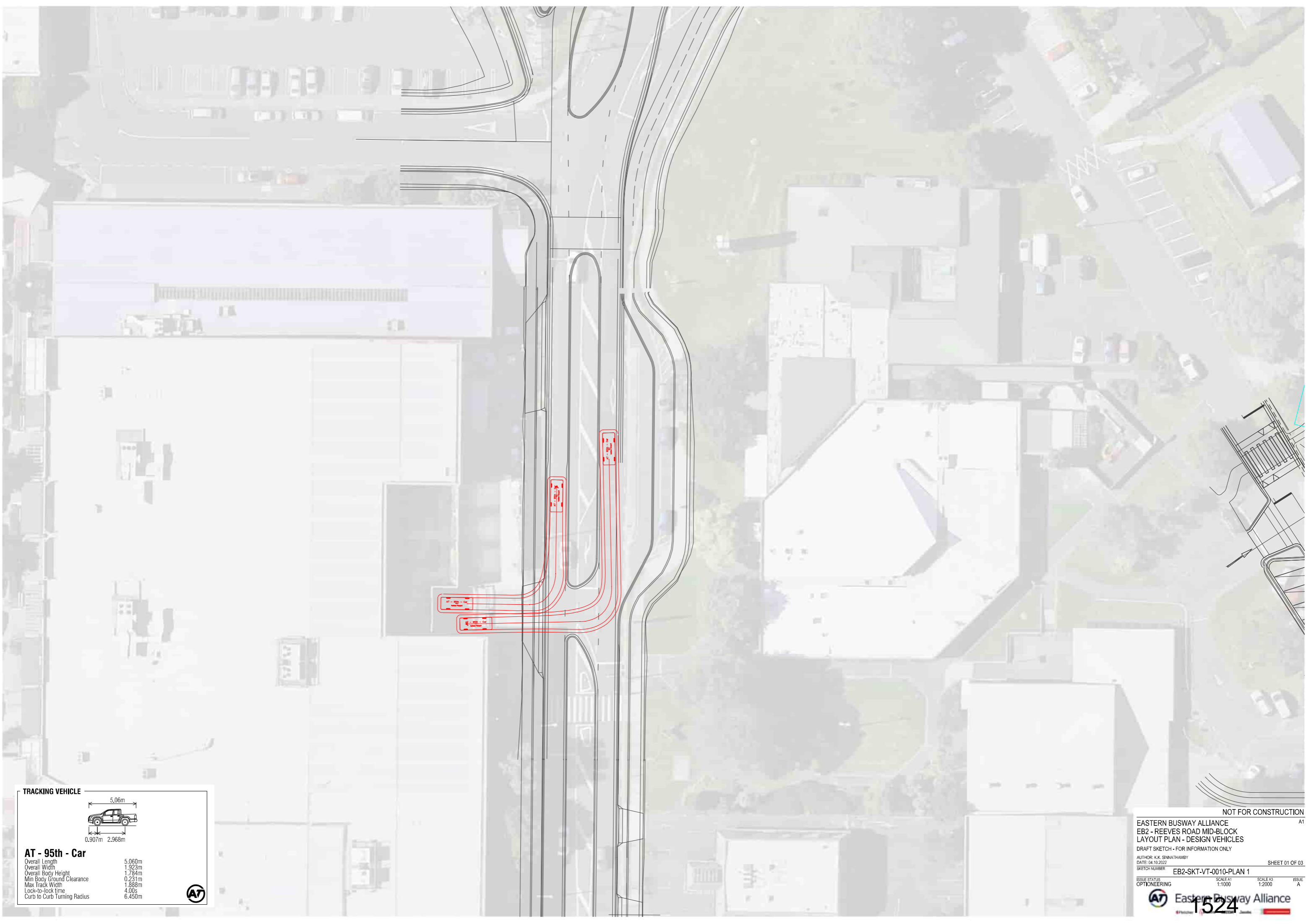
ISSUE STATUS: OPTONEERING
 SCALE A1: 1:1000
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 SHEET 06 OF 08
 ISSUE A

Eastern Busway Alliance

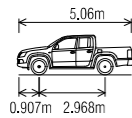
1521







TRACKING VEHICLE



AT - 95th - Car

Overall Length	5.060m
Overall Width	1.923m
Overall Body Height	1.784m
Min Body Ground Clearance	0.231m
Max Track Width	1.888m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.450m



NOT FOR CONSTRUCTION

EASTERN BUSWAY ALLIANCE
EB2 - REEVES ROAD MID-BLOCK
LAYOUT PLAN - DESIGN VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: K.K. SINNATHAMBY

DATE: 04.10.2022

SKETCH NUMBER

EB2-SKT-VT-0010-PLAN 1

SHEET 01 OF 03

ISSUE STATUS

OPTIONEERING

SCALE A1

1:1000

SCALE A3

1:2000

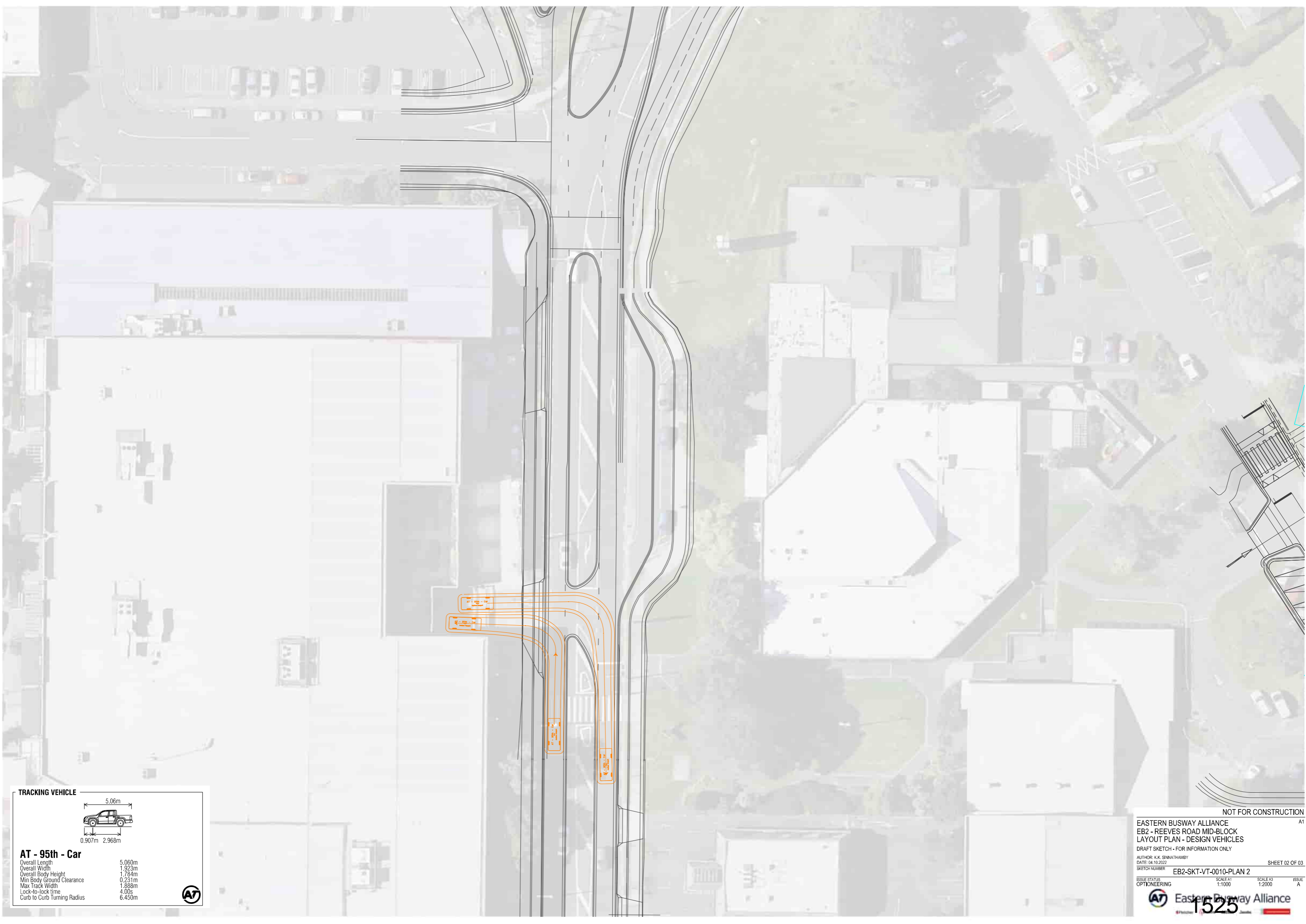
ISSUE

A

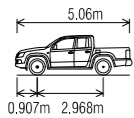


Eastern Busway Alliance

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TRACKING VEHICLE



AT - 95th - Car

Overall Length	5.060m
Overall Width	1.923m
Overall Body Height	1.784m
Min Body Ground Clearance	0.231m
Max Track Width	1.888m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.450m



NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB2 - REEVES ROAD MID-BLOCK
LAYOUT PLAN - DESIGN VEHICLES
DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: K.K. SINNATHAMBY
DATE: 04.10.2022
SKETCH NUMBER

EB2-SKT-VT-0010-PLAN 2

SHEET 02 OF 03

ISSUE STATUS
OPTIONEERING

SCALE A1
1:1000

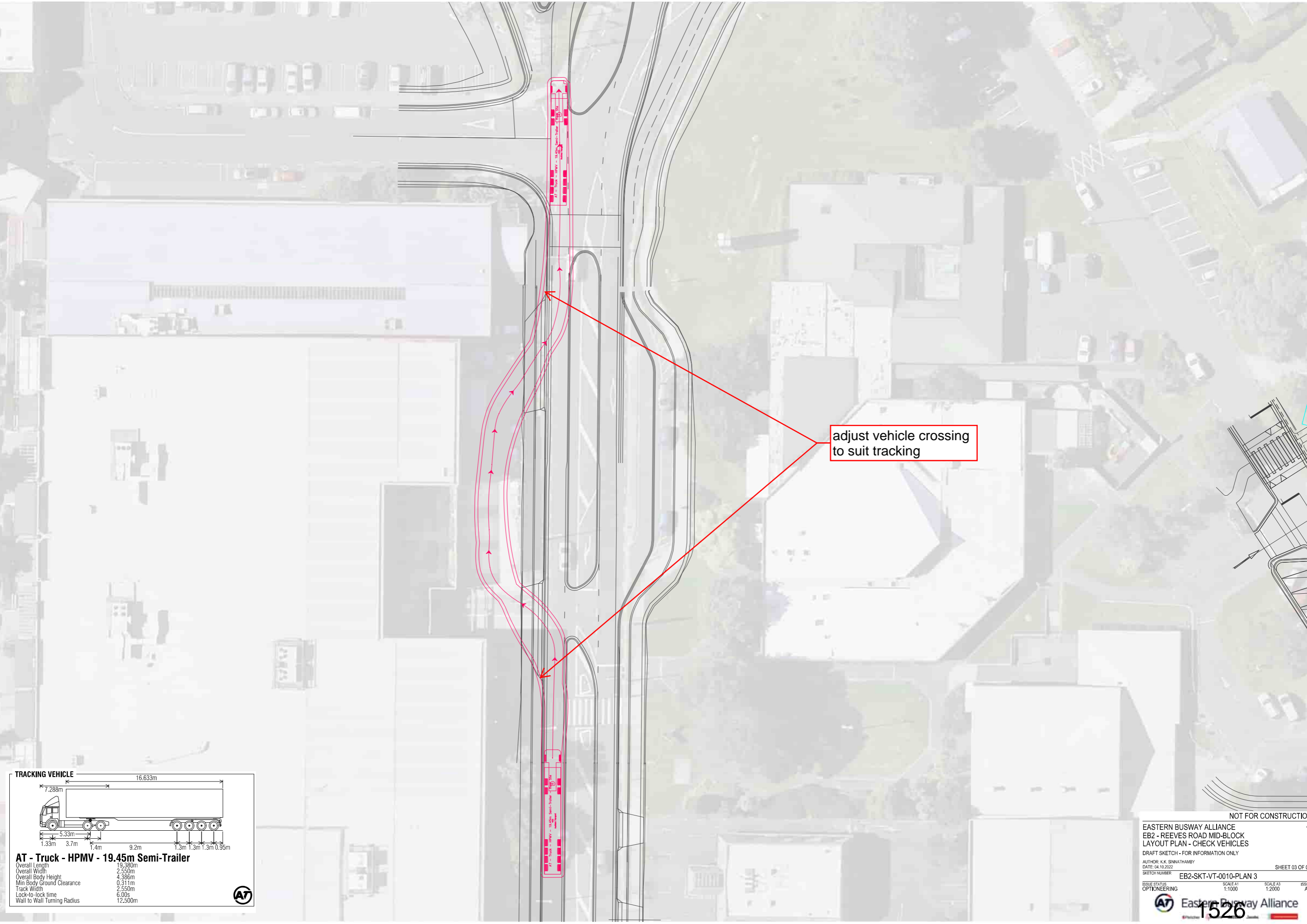
SCALE A3
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ISSUE
A

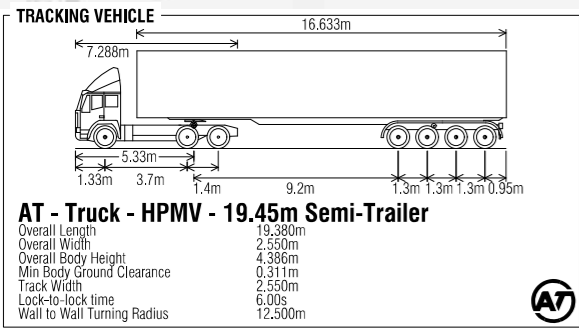


Eastern Busway Alliance

1525



adjust vehicle crossing to suit tracking



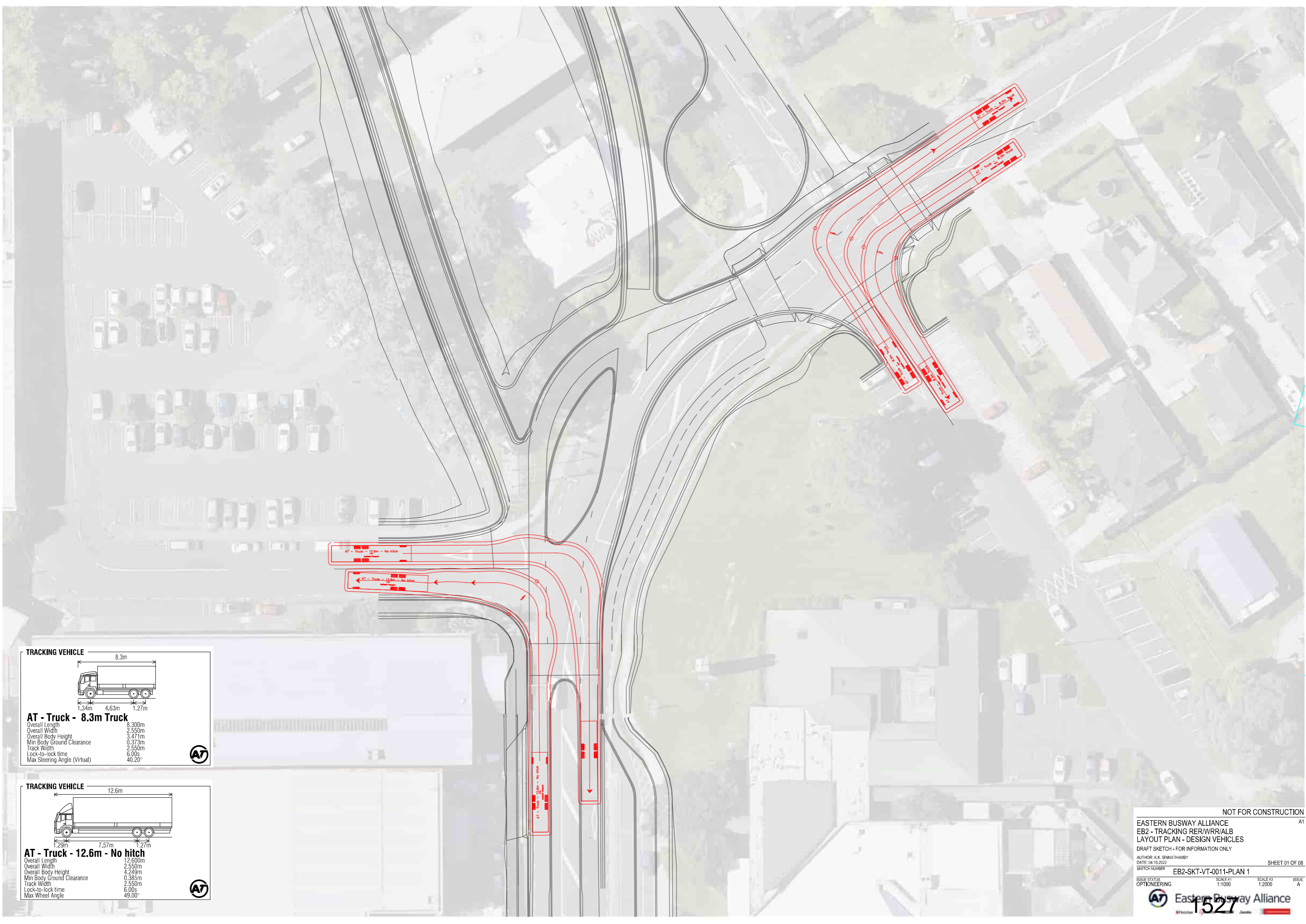
NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB2 - REEVES ROAD MID-BLOCK
LAYOUT PLAN - CHECK VEHICLES
DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: K.K. SINNATHAMBY
DATE: 04.10.2022
SHEET 03 OF 03

SKETCH NUMBER: EB2-SKT-VT-0010-PLAN 3

ISSUE STATUS: OPTIONEERING
SCALE A1: 1:1000
SCALE A3: 1:2000
ISSUE: A



TRACKING VEHICLE

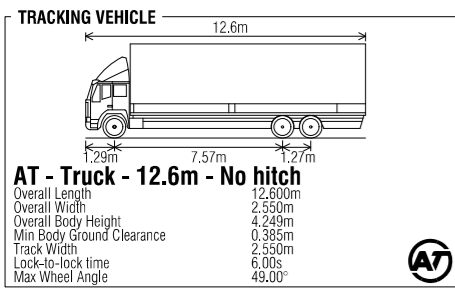
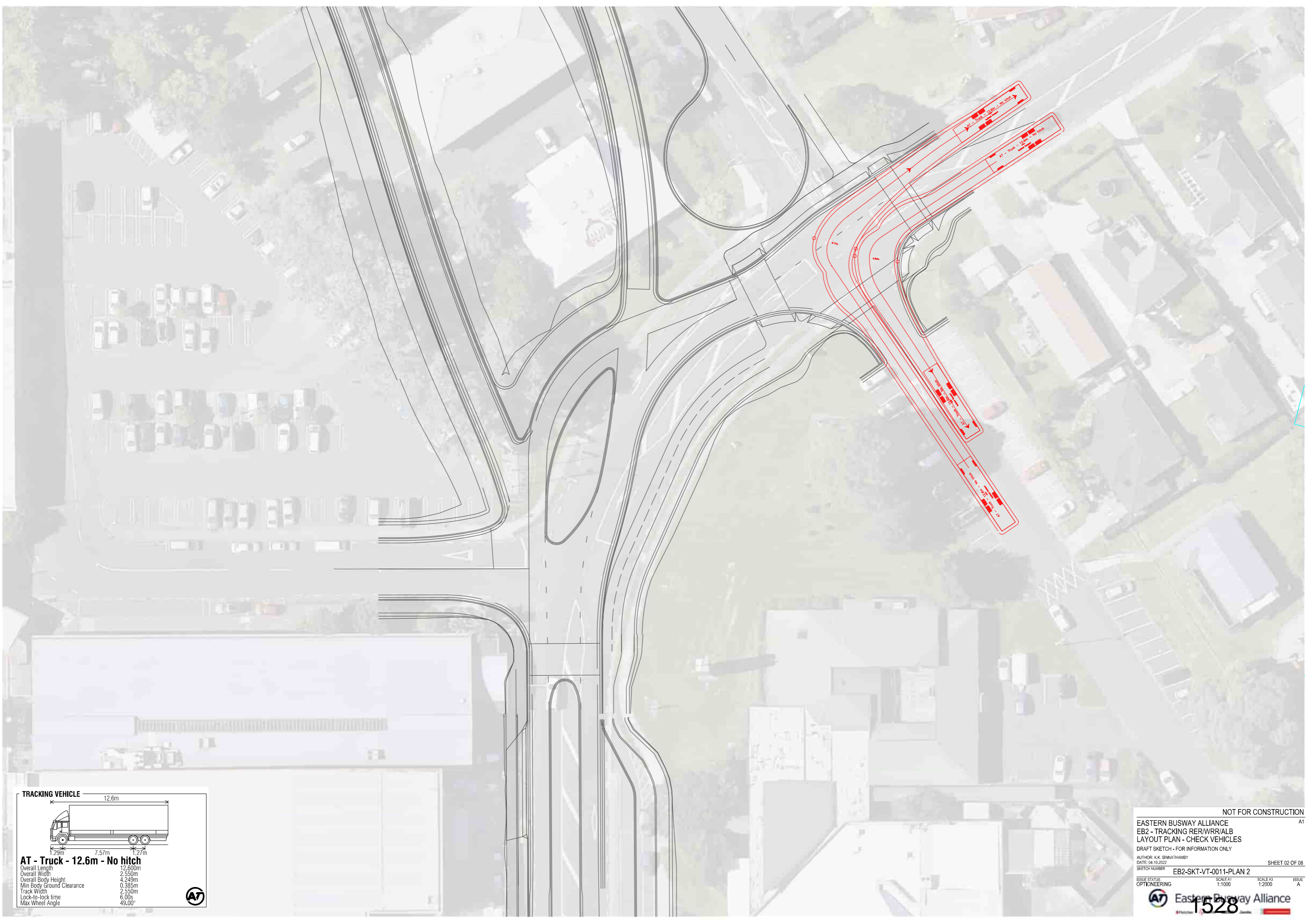
AT - Truck - 8.3m Truck

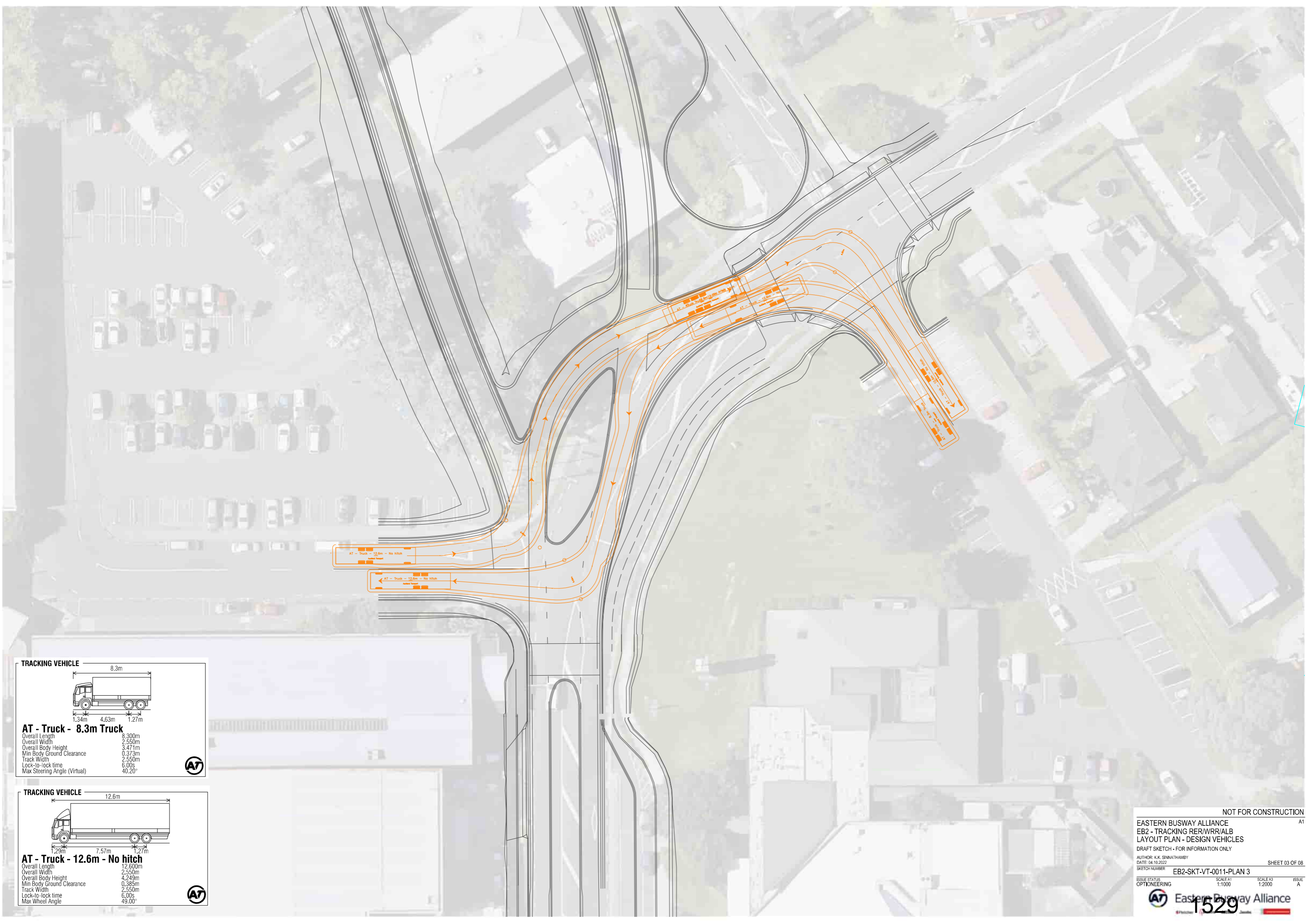
Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

TRACKING VEHICLE

AT - Truck - 12.6m - No hitch

Overall Length	12.600m
Overall Width	2.550m
Overall Body Height	4.249m
Min Body Ground Clearance	0.385m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Wheel Angle	49.00°





TRACKING VEHICLE

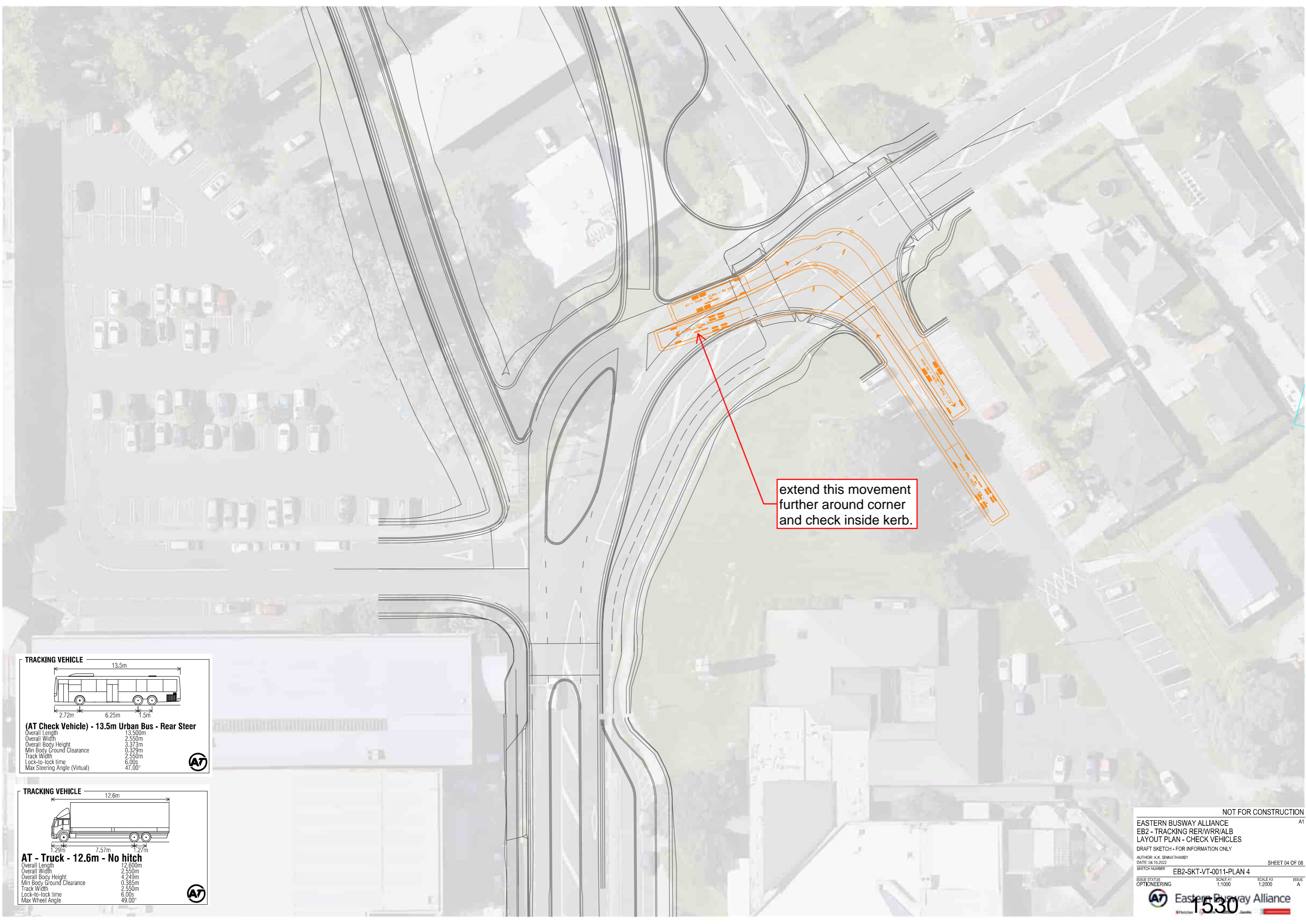
AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

TRACKING VEHICLE

AT - Truck - 12.6m - No hitch

Overall Length	12.600m
Overall Width	2.550m
Overall Body Height	4.249m
Min Body Ground Clearance	0.365m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Wheel Angle	49.00°



extend this movement further around corner and check inside kerb.

TRACKING VEHICLE

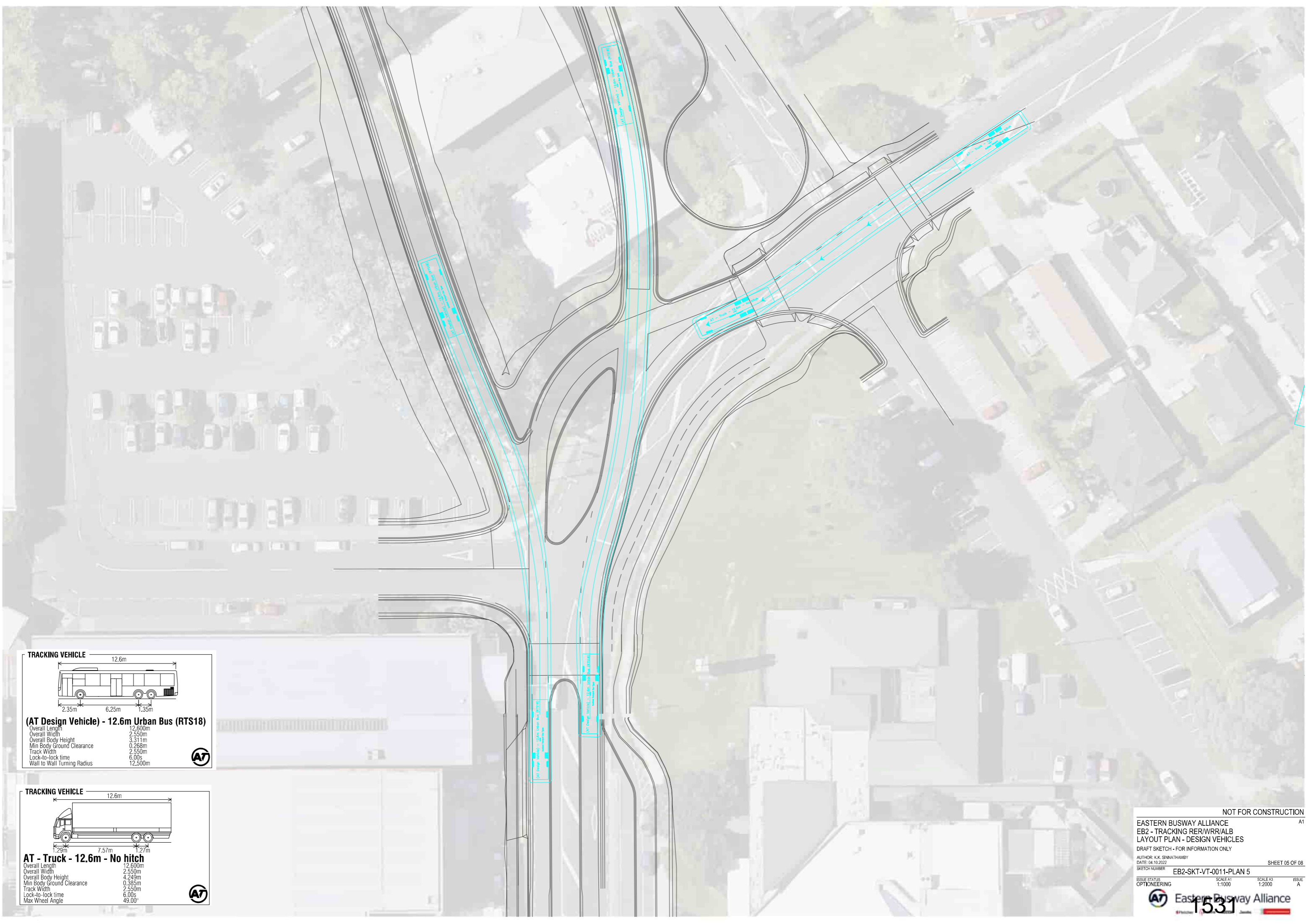
(AT Check Vehicle) - 13.5m Urban Bus - Rear Steer

Overall Length	13.500m
Overall Width	2.550m
Overall Body Height	3.373m
Min Body Ground Clearance	0.329m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	47.00°

TRACKING VEHICLE

AT - Truck - 12.6m - No hitch

Overall Length	12.600m
Overall Width	2.550m
Overall Body Height	4.249m
Min Body Ground Clearance	0.365m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Wheel Angle	49.00°



TRACKING VEHICLE

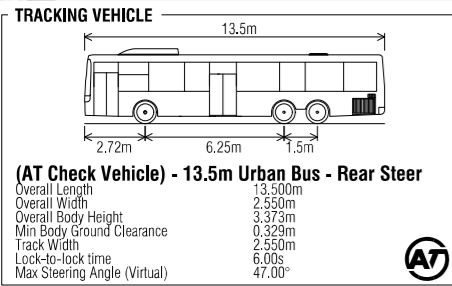
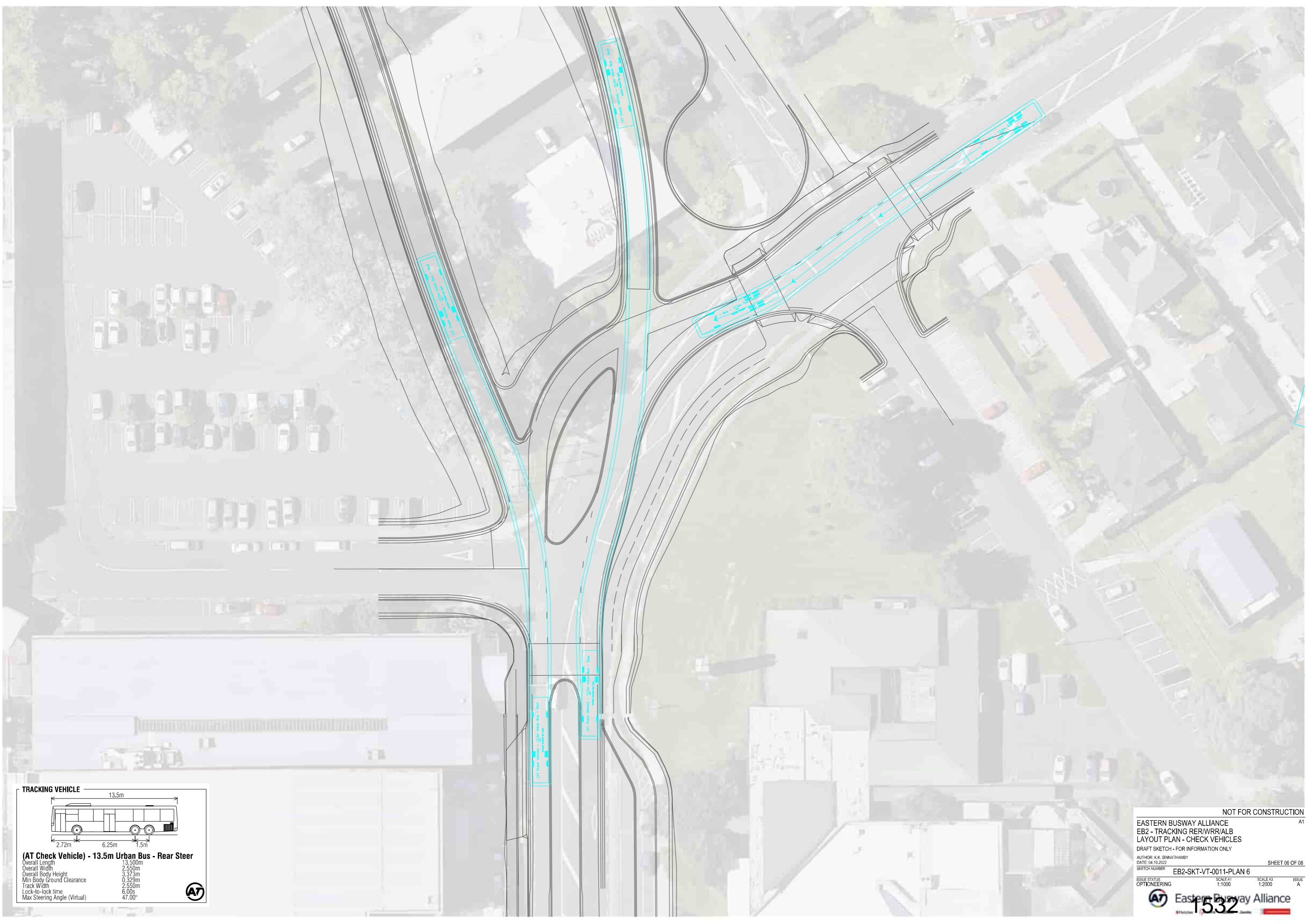
(AT Design Vehicle) - 12.6m Urban Bus (RTS18)

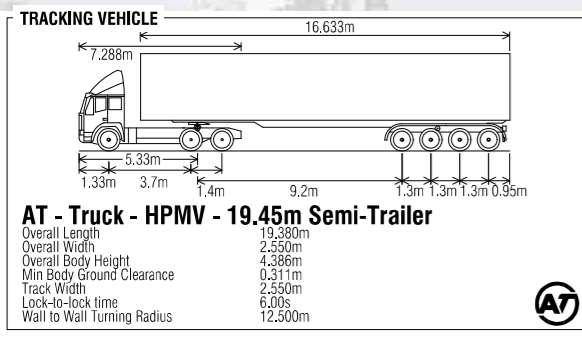
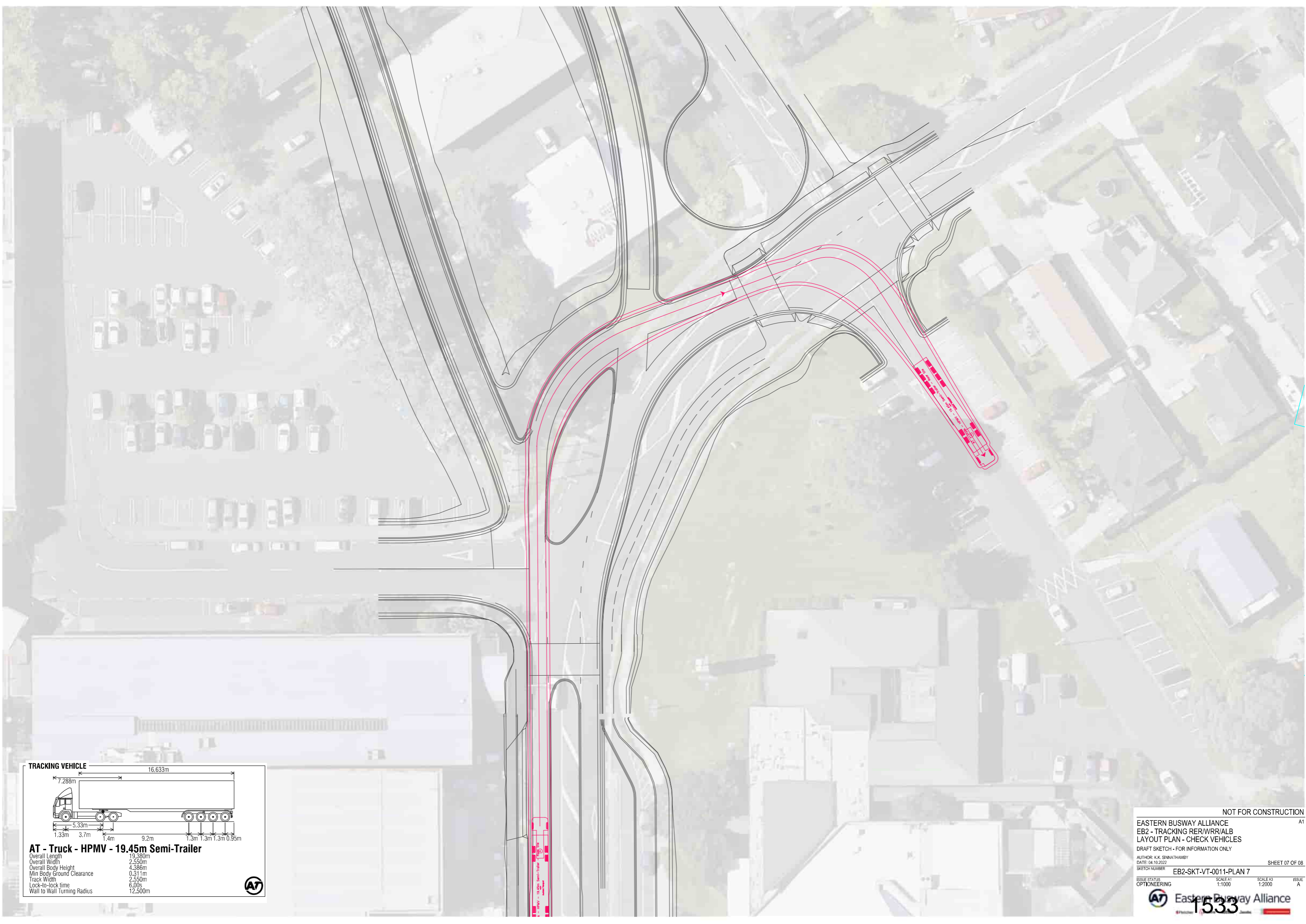
Overall Length	12.500m
Overall Width	2.550m
Overall Body Height	3.311m
Min Body Ground Clearance	0.268m
Track Width	2.550m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	12.500m

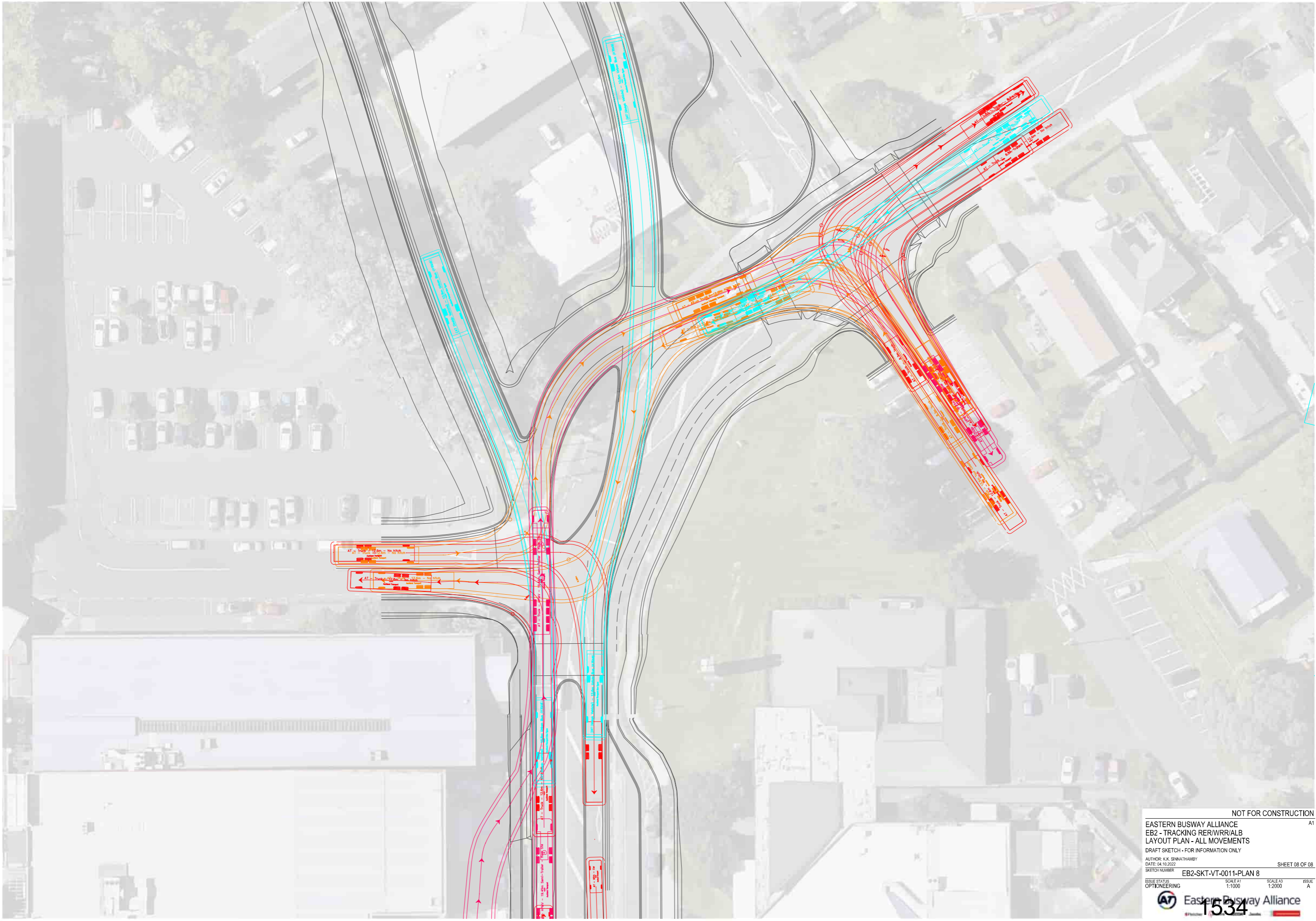
TRACKING VEHICLE

AT - Truck - 12.6m - No hitch

Overall Length	12.600m
Overall Width	2.550m
Overall Body Height	4.249m
Min Body Ground Clearance	0.385m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Wheel Angle	49.00°







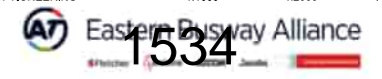
NOT FOR CONSTRUCTION

EASTERN BUSWAY ALLIANCE
EB2 - TRACKING RER/WRR/ALB
LAYOUT PLAN - ALL MOVEMENTS

DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: K.K. SINNATHAMBY
DATE: 04.10.2022
SKETCH NUMBER: EB2-SKT-VT-0011-PLAN 8

ISSUE STATUS: OPTONEERING
SCALE A1: 1:1000
SCALE A3: 1:2000
ISSUE: A

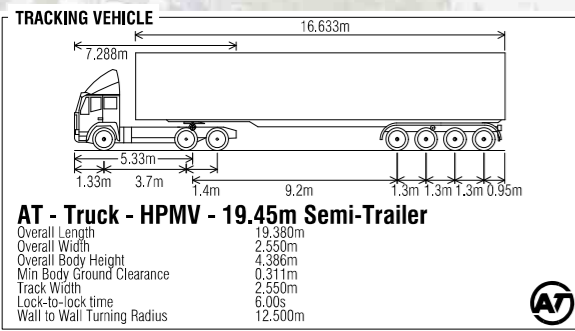
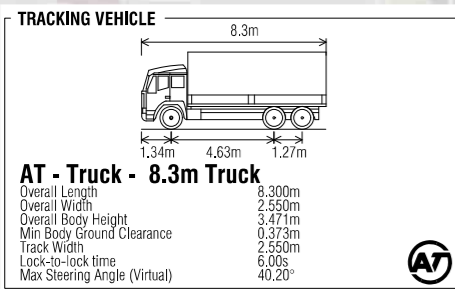
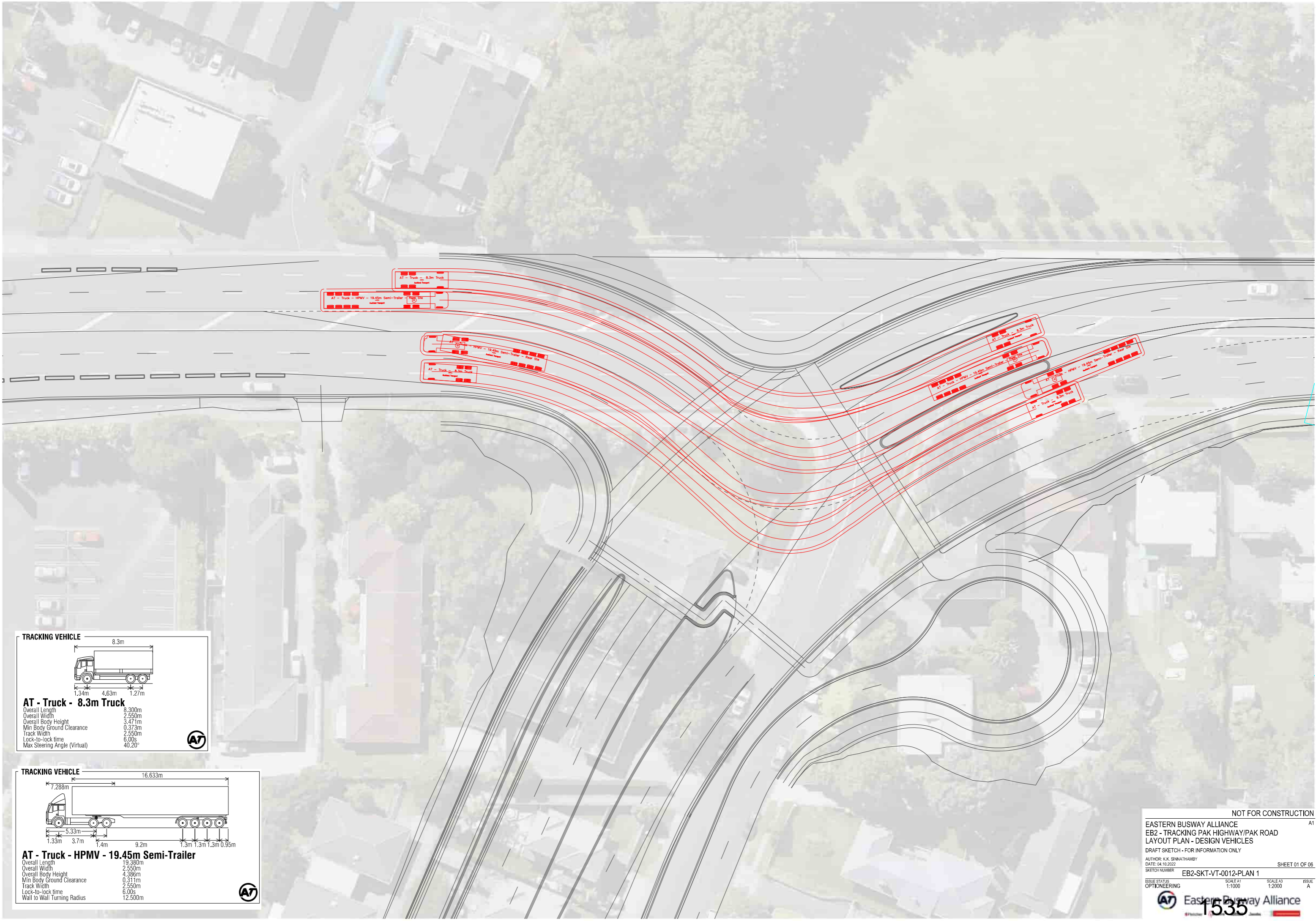


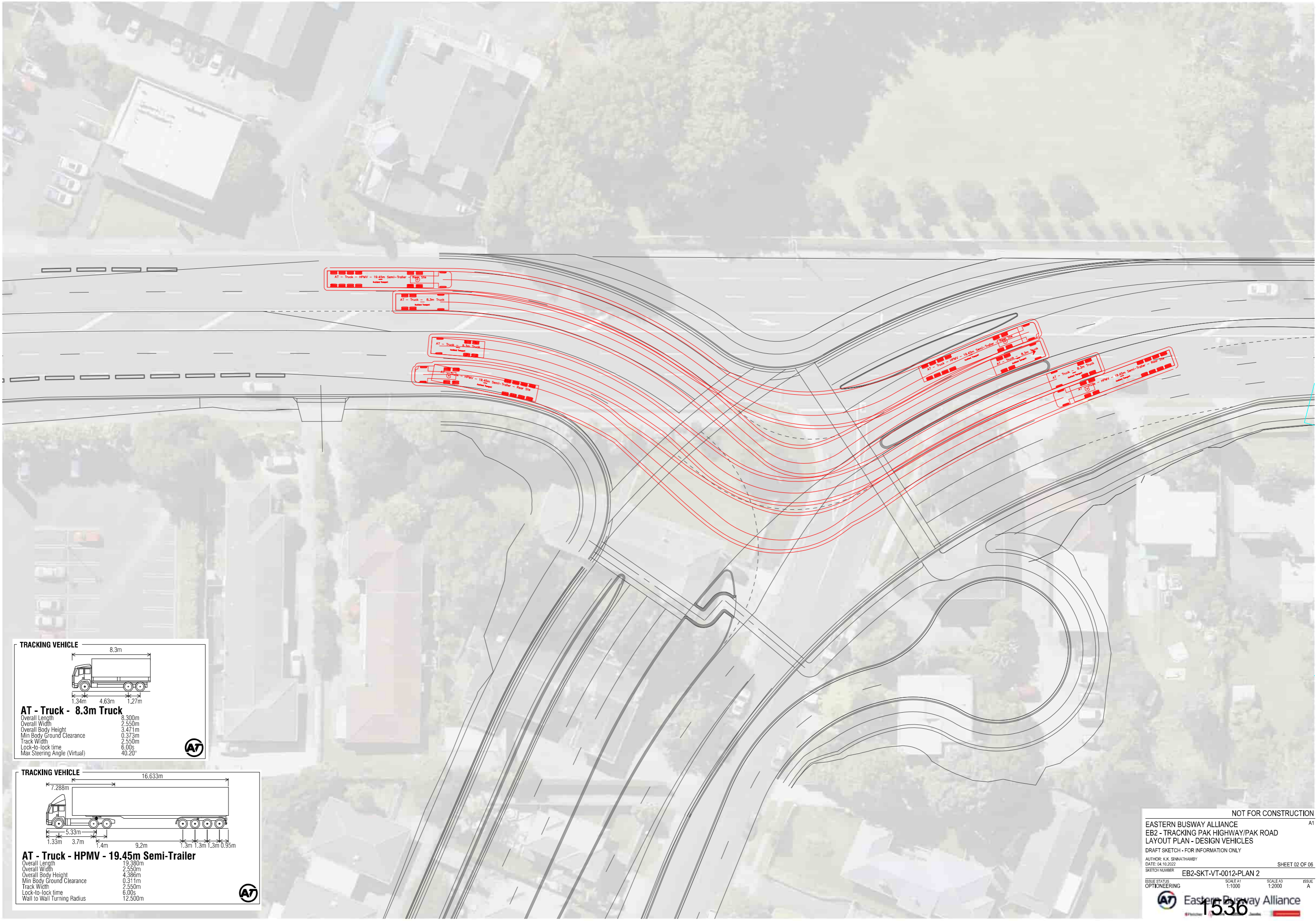
Eastern Busway Alliance

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A1

SHEET 08 OF 08





TRACKING VEHICLE

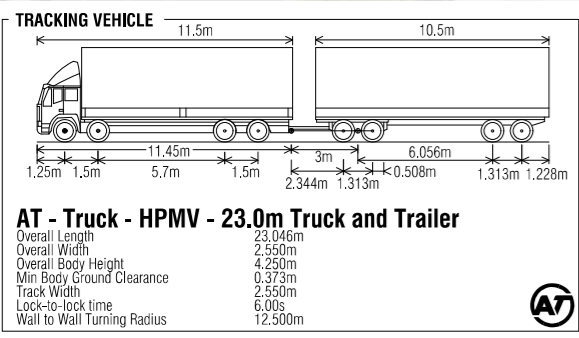
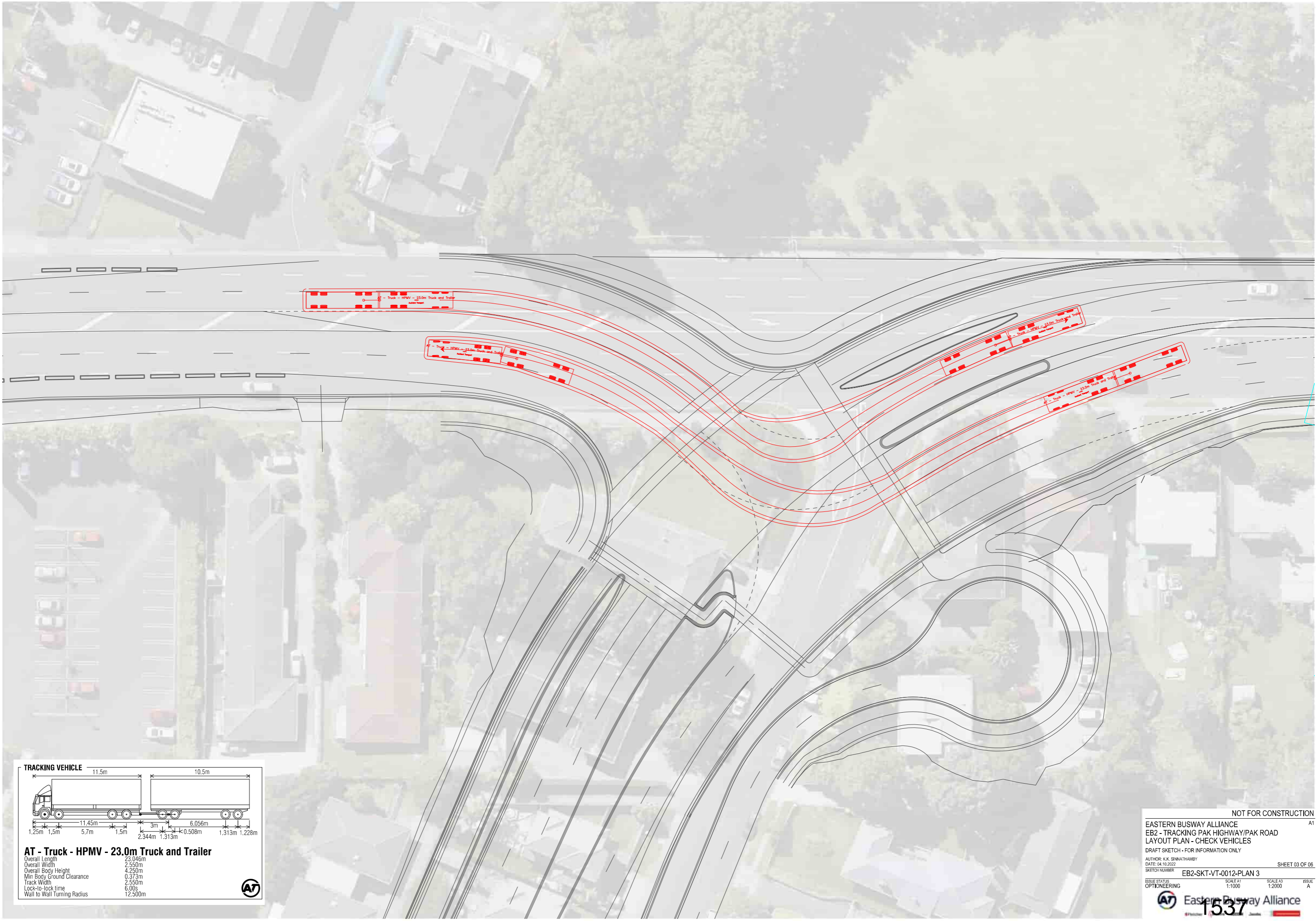
AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

TRACKING VEHICLE

AT - Truck - HPMV - 19.45m Semi-Trailer

Overall Length	19.380m
Overall Width	2.550m
Overall Body Height	4.386m
Min Body Ground Clearance	0.311m
Track Width	2.550m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	12.500m



NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB2 - TRACKING PAK HIGHWAY/PAK ROAD
LAYOUT PLAN - CHECK VEHICLES

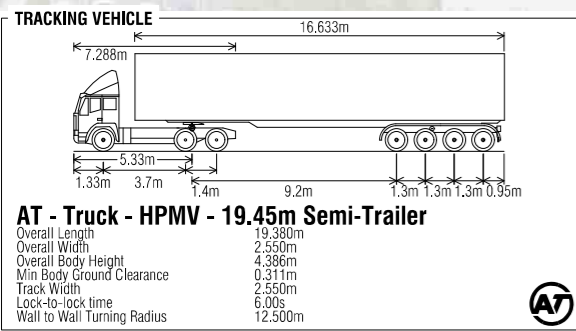
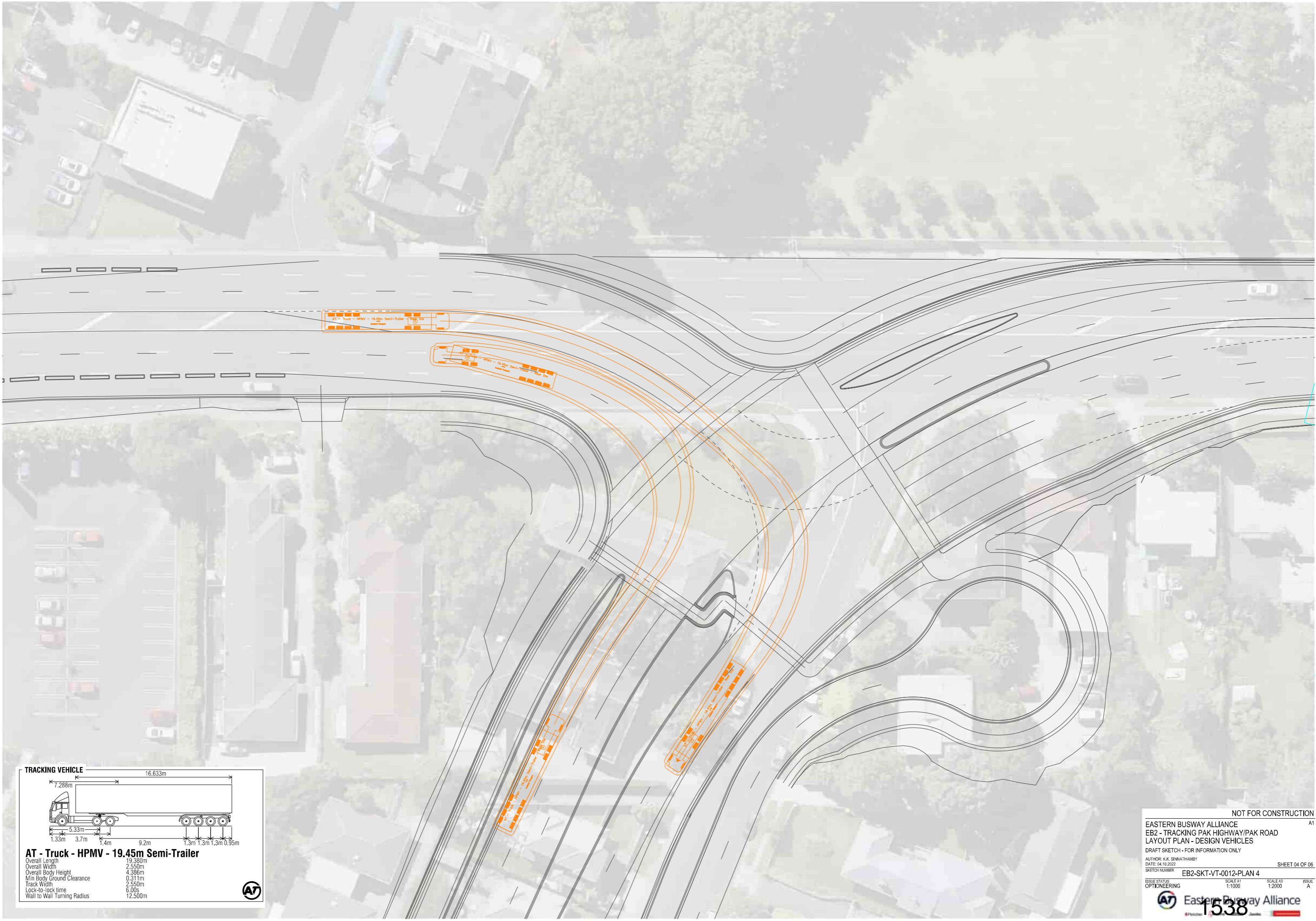
DRAFT SKETCH - FOR INFORMATION ONLY

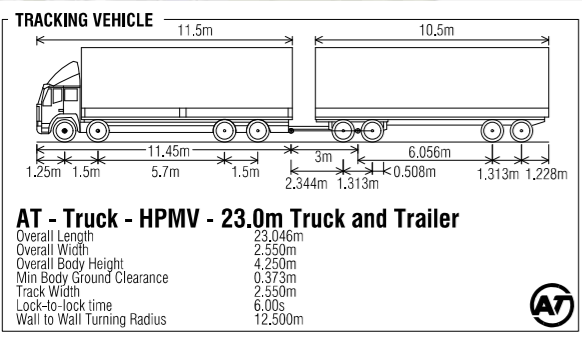
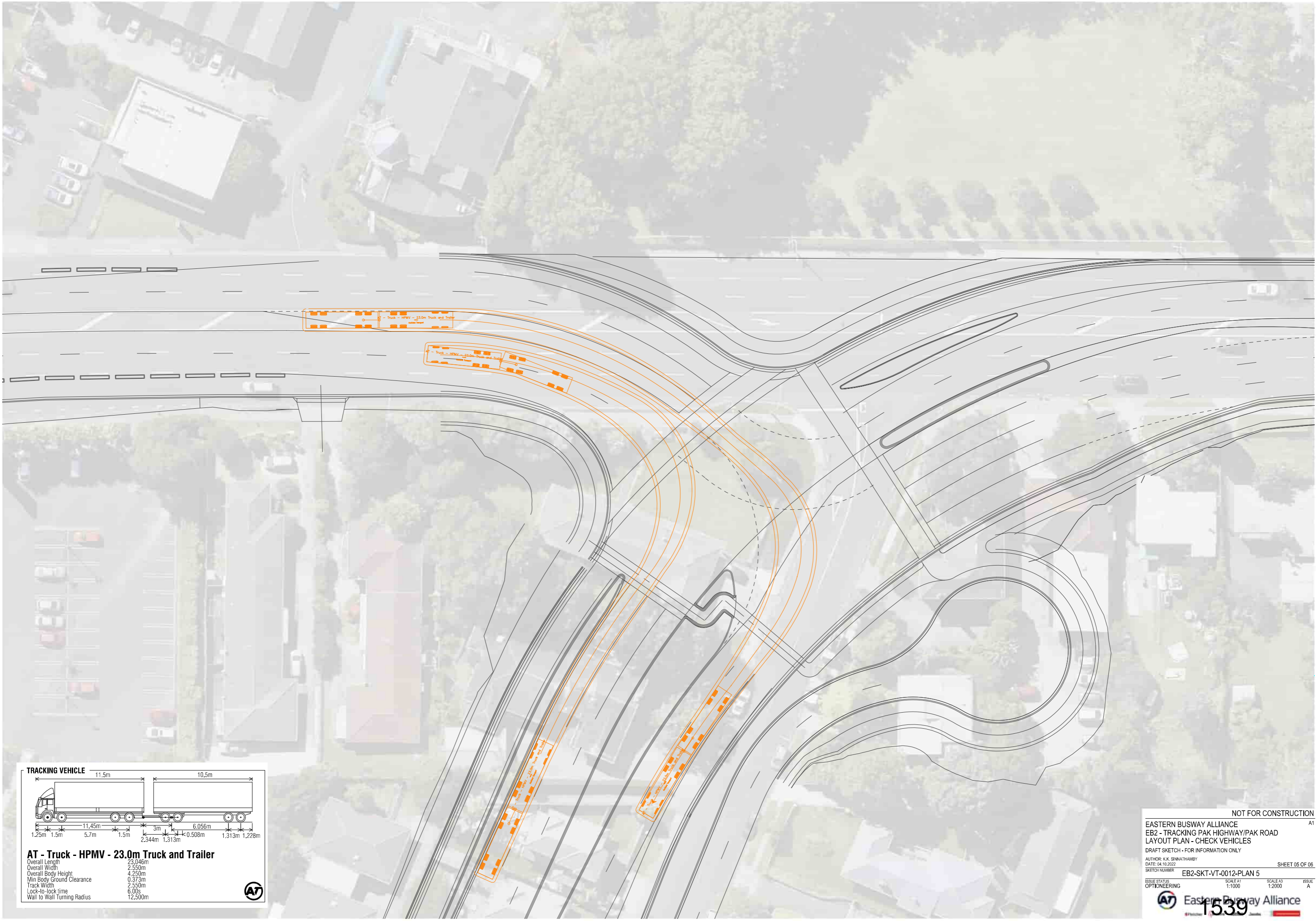
AUTHOR: K.K. SINNATHAMBY
 DATE: 04.10.2022
 SHEET 03 OF 06

SKETCH NUMBER: **EB2-SKT-VT-0012-PLAN 3**

ISSUE STATUS: OPTONEERING
 SCALE A1: 1:1000
 SCALE A3: 1:2000
 ISSUE: A

Eastern Busway Alliance
 1537





NOT FOR CONSTRUCTION A1

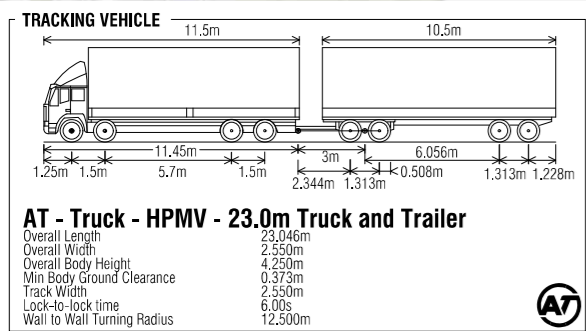
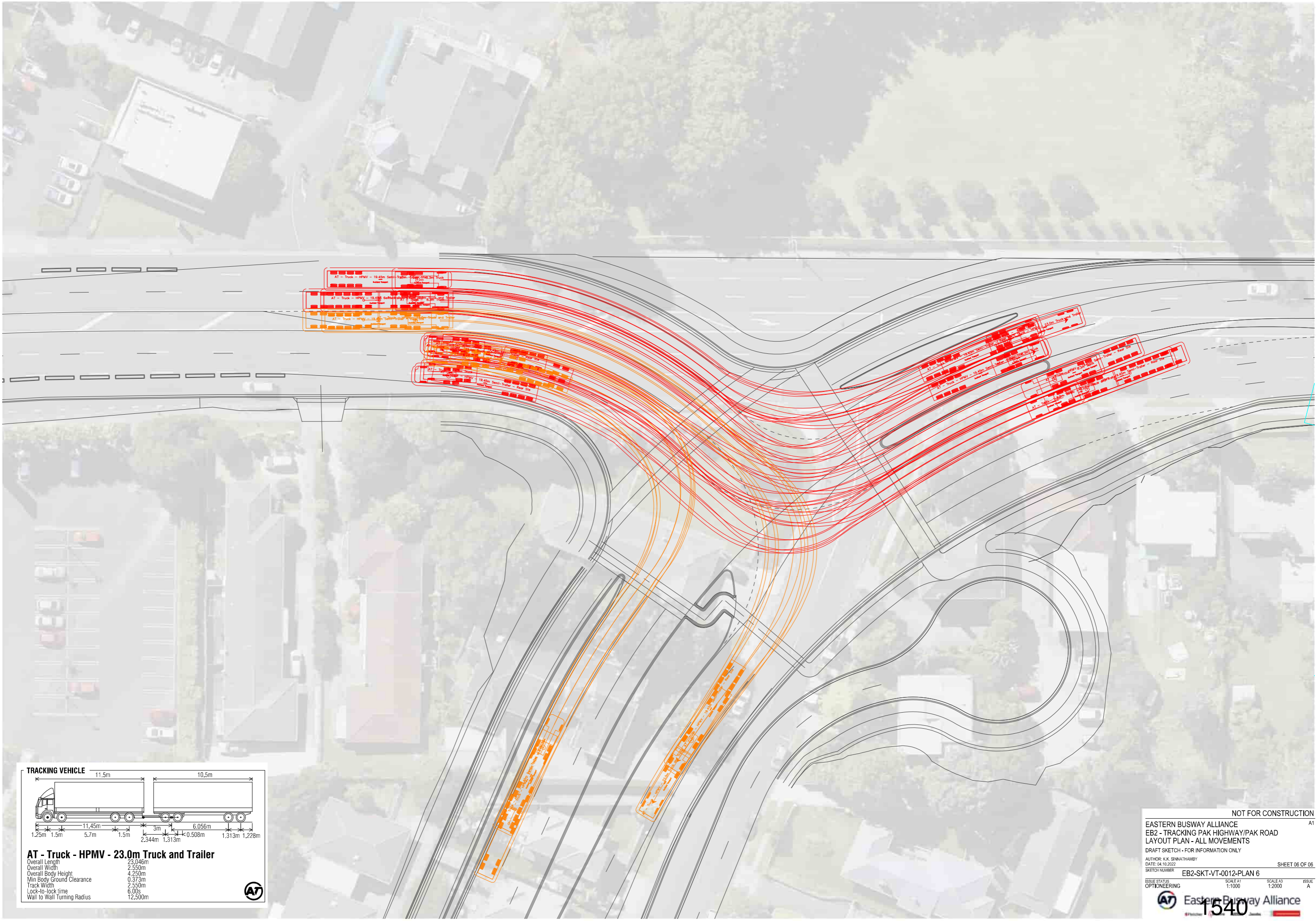
EASTERN BUSWAY ALLIANCE
EB2 - TRACKING PAK HIGHWAY/PAK ROAD
LAYOUT PLAN - CHECK VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: K.K. SINNATHAMBY
 DATE: 04.10.2022
 SKETCH NUMBER: EB2-SKT-VT-0012-PLAN 5
 SHEET 05 OF 06

ISSUE STATUS: OPTIONEERING
 SCALE A1: 1:1000
 SCALE A3: 1:2000
 ISSUE: A

Eastern Busway Alliance
 1539



NOT FOR CONSTRUCTION ^{A1}

EASTERN BUSWAY ALLIANCE
EB2 - TRACKING PAK HIGHWAY/PAK ROAD
LAYOUT PLAN - ALL MOVEMENTS

DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: K.K. SINNATHAMBY
 DATE: 04.10.2022
 SHEET 06 OF 06

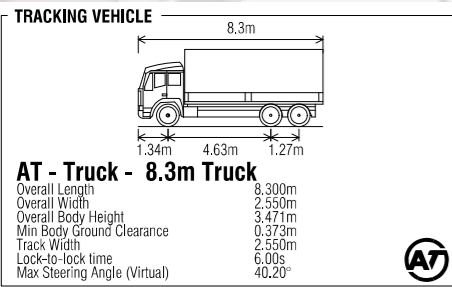
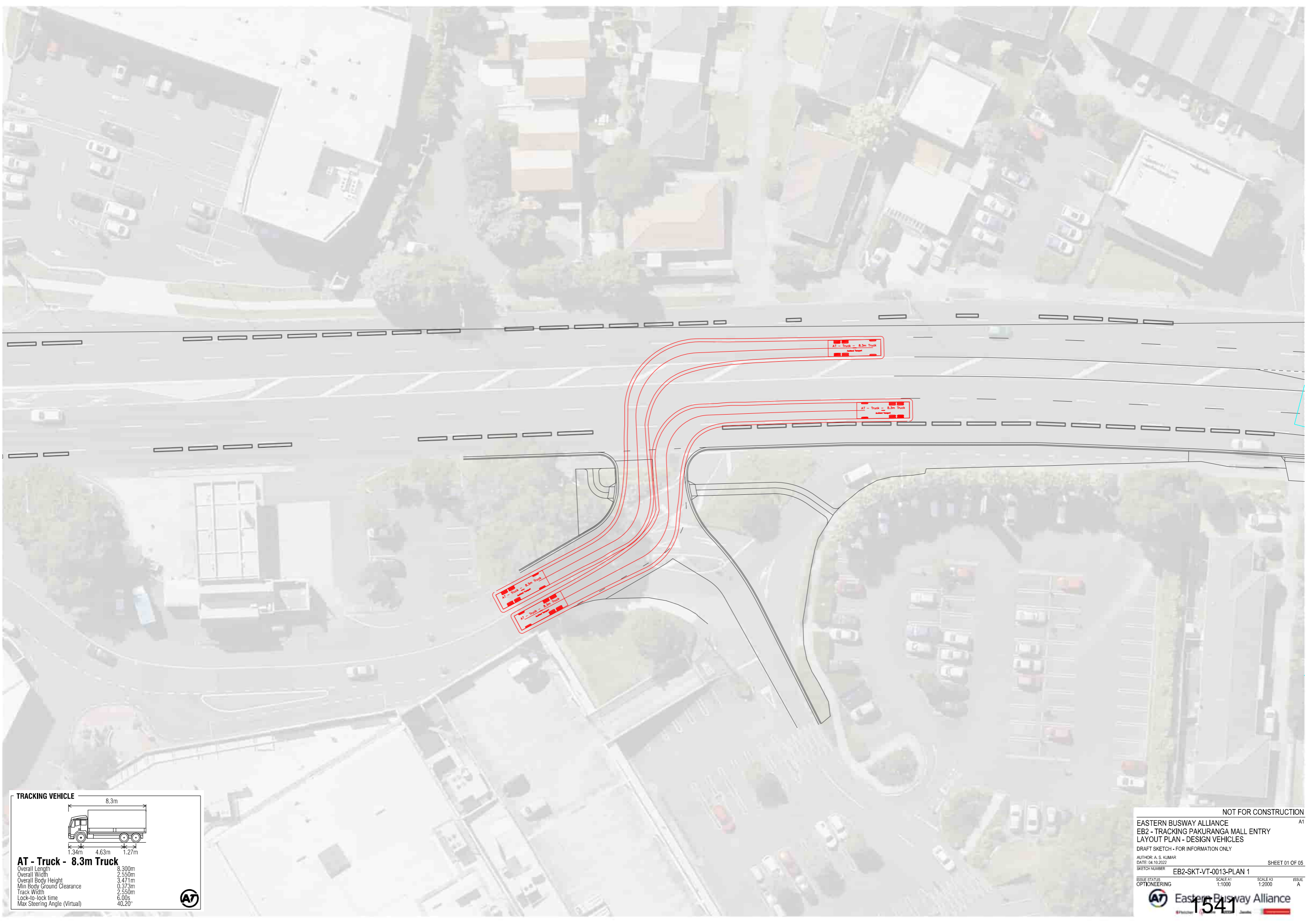
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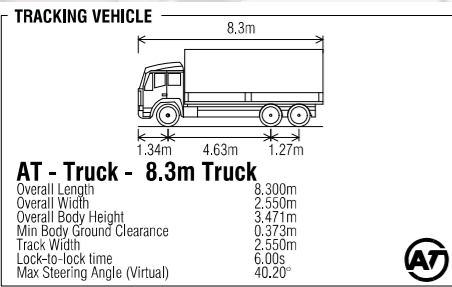
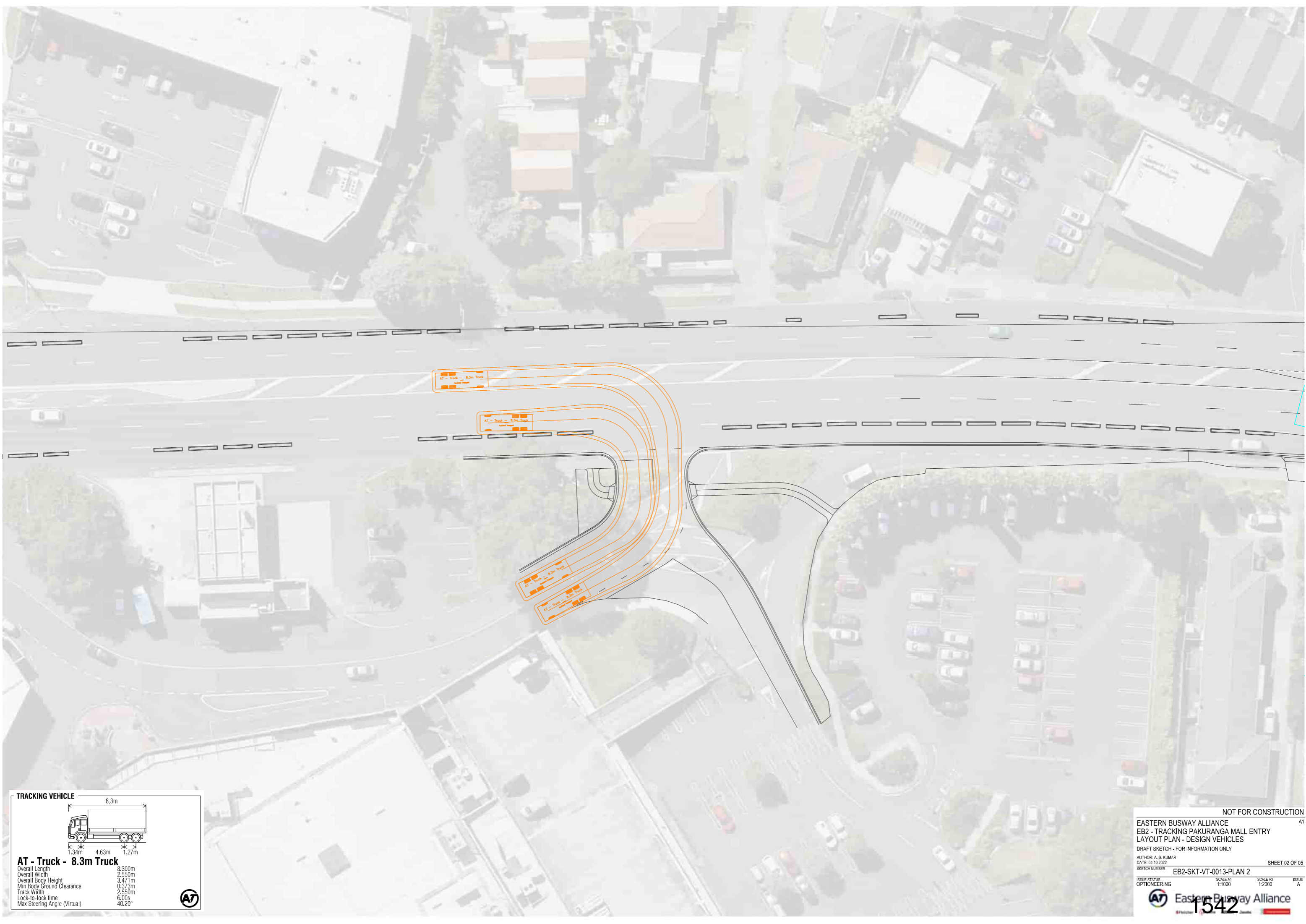
ISSUE STATUS: **OPTIONEERING**

SCALE A1: 1:1000 SCALE A3: 1:2000 ISSUE: A

Eastern Busway Alliance

1540





NOT FOR CONSTRUCTION ^{A1}

EASTERN BUSWAY ALLIANCE
EB2 - TRACKING PAKURANGA MALL ENTRY
LAYOUT PLAN - DESIGN VEHICLES
 DRAFT SKETCH - FOR INFORMATION ONLY

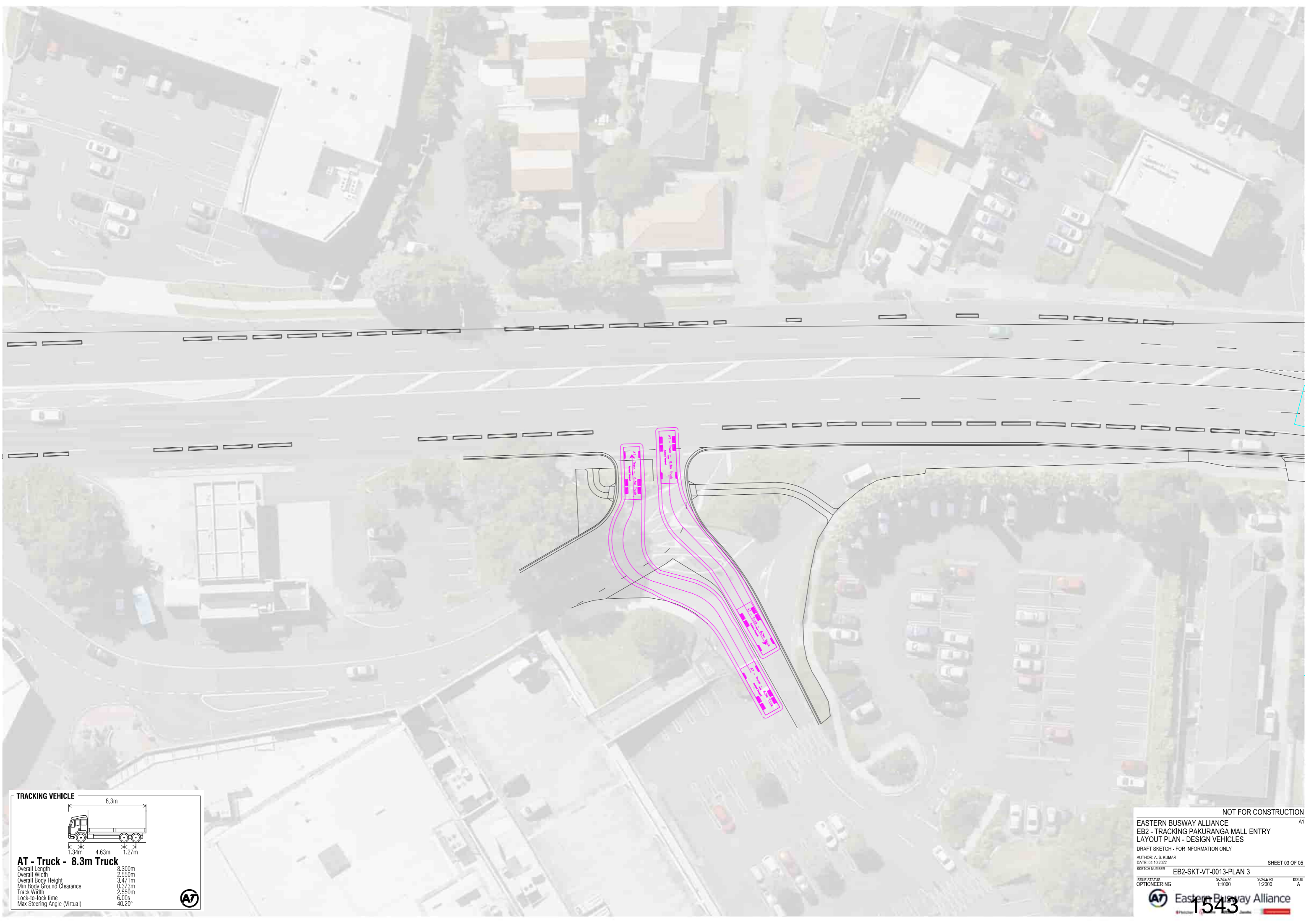
AUTHOR: A. S. KUMAR
 DATE: 04.10.2022
 SHEET 02 OF 05

SKETCH NUMBER: **EB2-SKT-VT-0013-PLAN 2**

ISSUE STATUS: **OPTONEERING** SCALE A1: 1:1000 SCALE A3: 1:2000 ISSUE: A

Eastern Busway Alliance

1542



TRACKING VEHICLE

AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

NOT FOR CONSTRUCTION ^{A1}

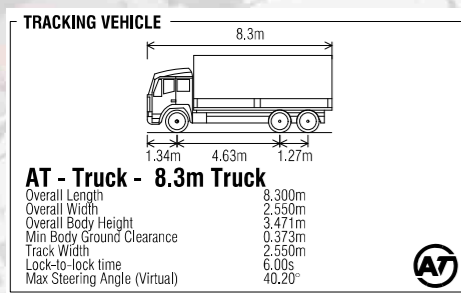
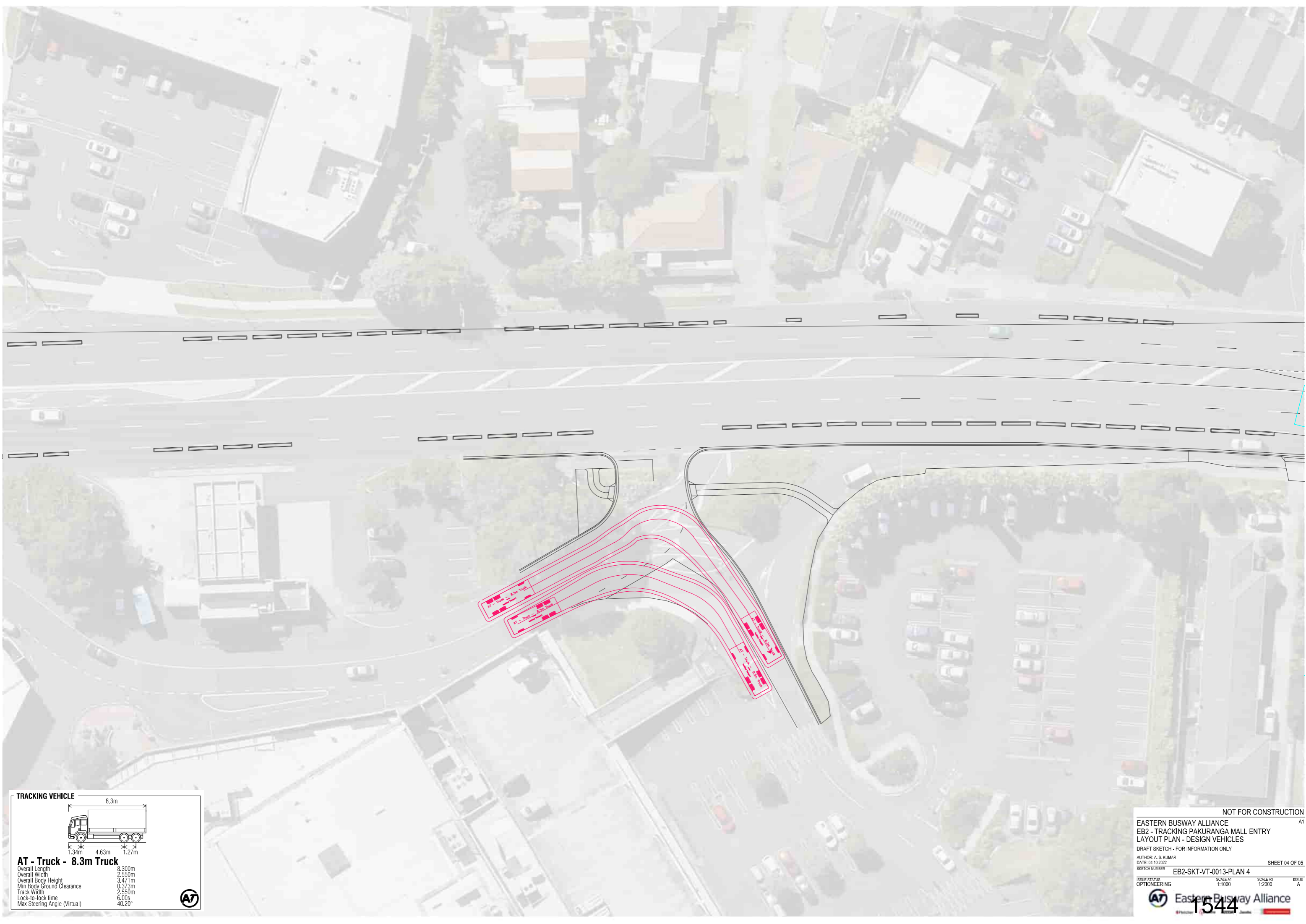
EASTERN BUSWAY ALLIANCE
EB2 - TRACKING PAKURANGA MALL ENTRY
LAYOUT PLAN - DESIGN VEHICLES
 DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: A. S. KUMAR
 DATE: 04.10.2022
 SHEET 03 OF 05

SKETCH NUMBER: **EB2-SKT-VT-0013-PLAN 3**

ISSUE STATUS: **OPTONEERING** SCALE A1: 1:1000 SCALE A3: 1:2000 ISSUE A

1543



NOT FOR CONSTRUCTION ^{A1}

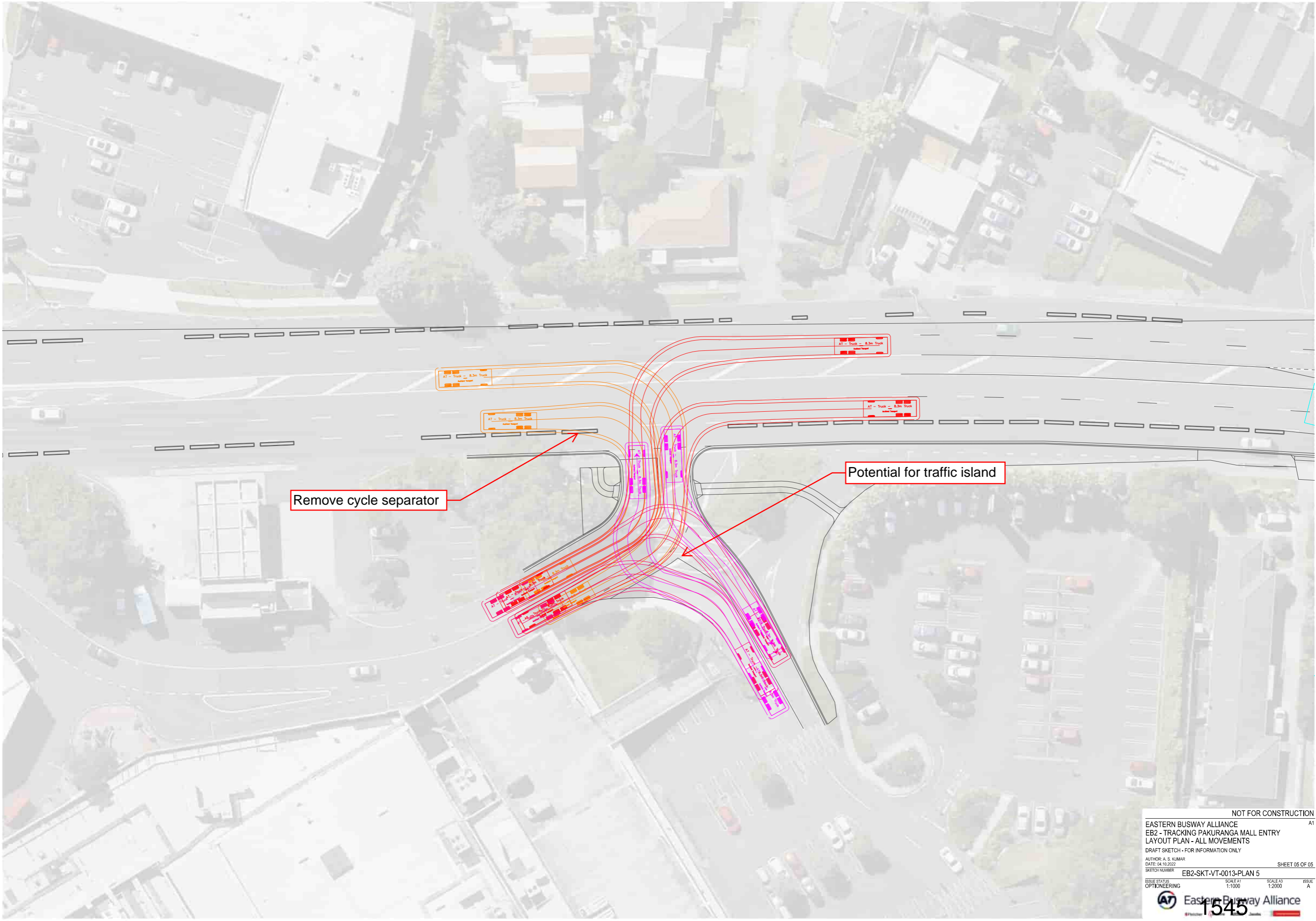
EASTERN BUSWAY ALLIANCE
EB2 - TRACKING PAKURANGA MALL ENTRY
LAYOUT PLAN - DESIGN VEHICLES
 DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: A. S. KUMAR
 DATE: 04.10.2022
 SHEET 04 OF 05

SKETCH NUMBER: **EB2-SKT-VT-0013-PLAN 4**

ISSUE STATUS: **OPTONEERING** SCALE A1: 1:1000 SCALE A3: 1:2000 ISSUE A

Eastern Busway Alliance
1544



Remove cycle separator

Potential for traffic island

AT - Truck - 8.3m Truck

AT - Truck - 8.3m Truck

AT - Truck - 8.3m Truck

AT - Truck - 8.3m Truck

AT - Truck - 8.3m Truck

AT - Truck - 8.3m Truck

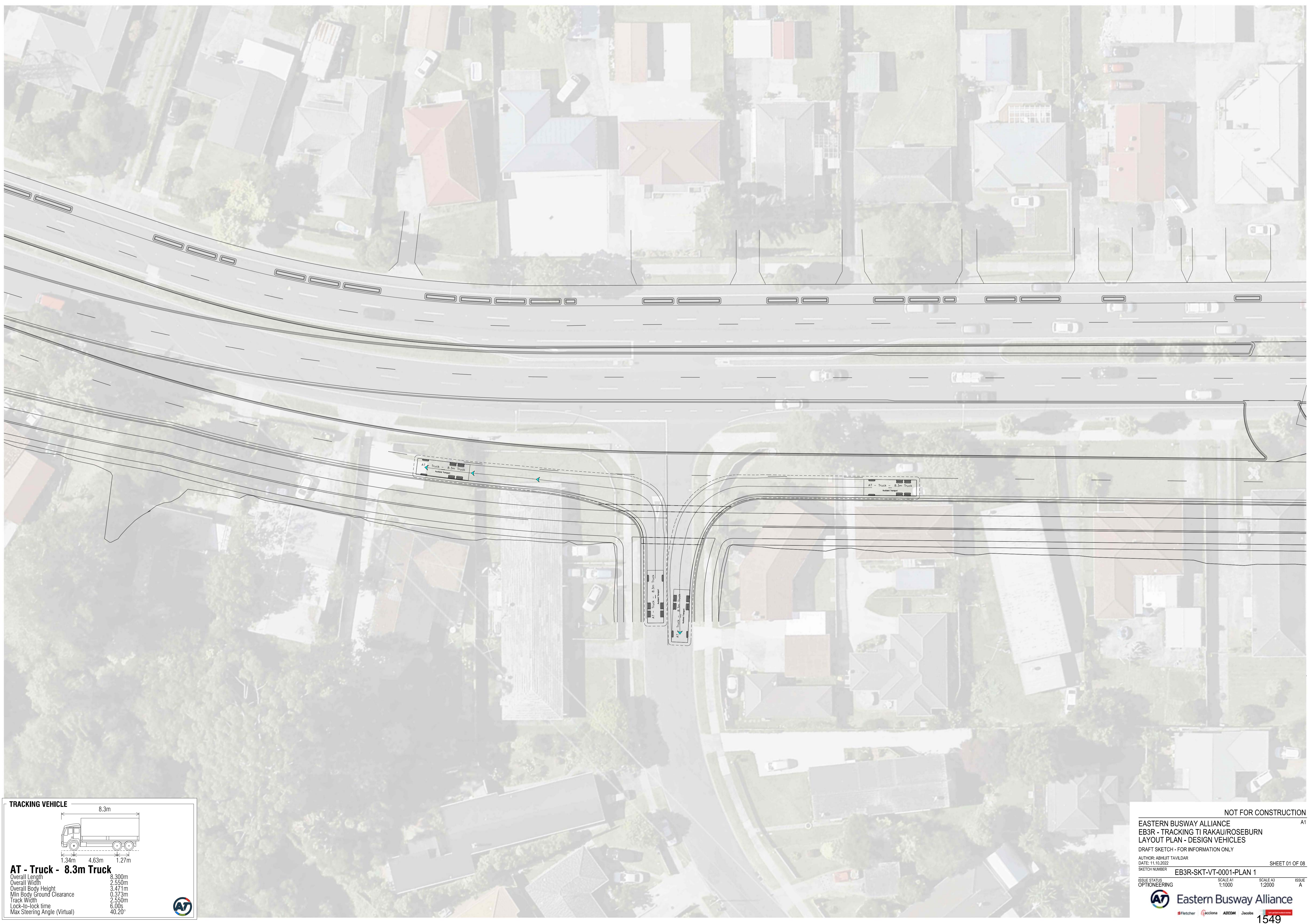
AT - Truck - 8.3m Truck

NOT FOR CONSTRUCTION
 EASTERN BUSWAY ALLIANCE
 EB2 - TRACKING PAKURANGA MALL ENTRY
 LAYOUT PLAN - ALL MOVEMENTS
 DRAFT SKETCH - FOR INFORMATION ONLY
 AUTHOR: A. S. KUMAR
 DATE: 04.10.2022
 SKETCH NUMBER: EB2-SKT-VT-0013-PLAN 5
 SCALE A1: 1:1000
 SCALE A3: 1:2000
 SHEET 05 OF 05
 A

Appendix 3. Visibility Assessments

The following visibility assessments are provided:

- SSD – Graphs for each lane of each carriageway for Ti Rakau Drive and Pakuranga Highway
- SISD – Plans showing critical visibility triangle(s) for each intersection
- ASD – Summary of ASD provided on minor approach to priority and signal controlled intersections where there a horizontal/vertical curves or speed tables on the approaches



TRACKING VEHICLE

AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

NOT FOR CONSTRUCTION ^{A1}

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TI RAKAU/ROSEBURN
LAYOUT PLAN - DESIGN VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY

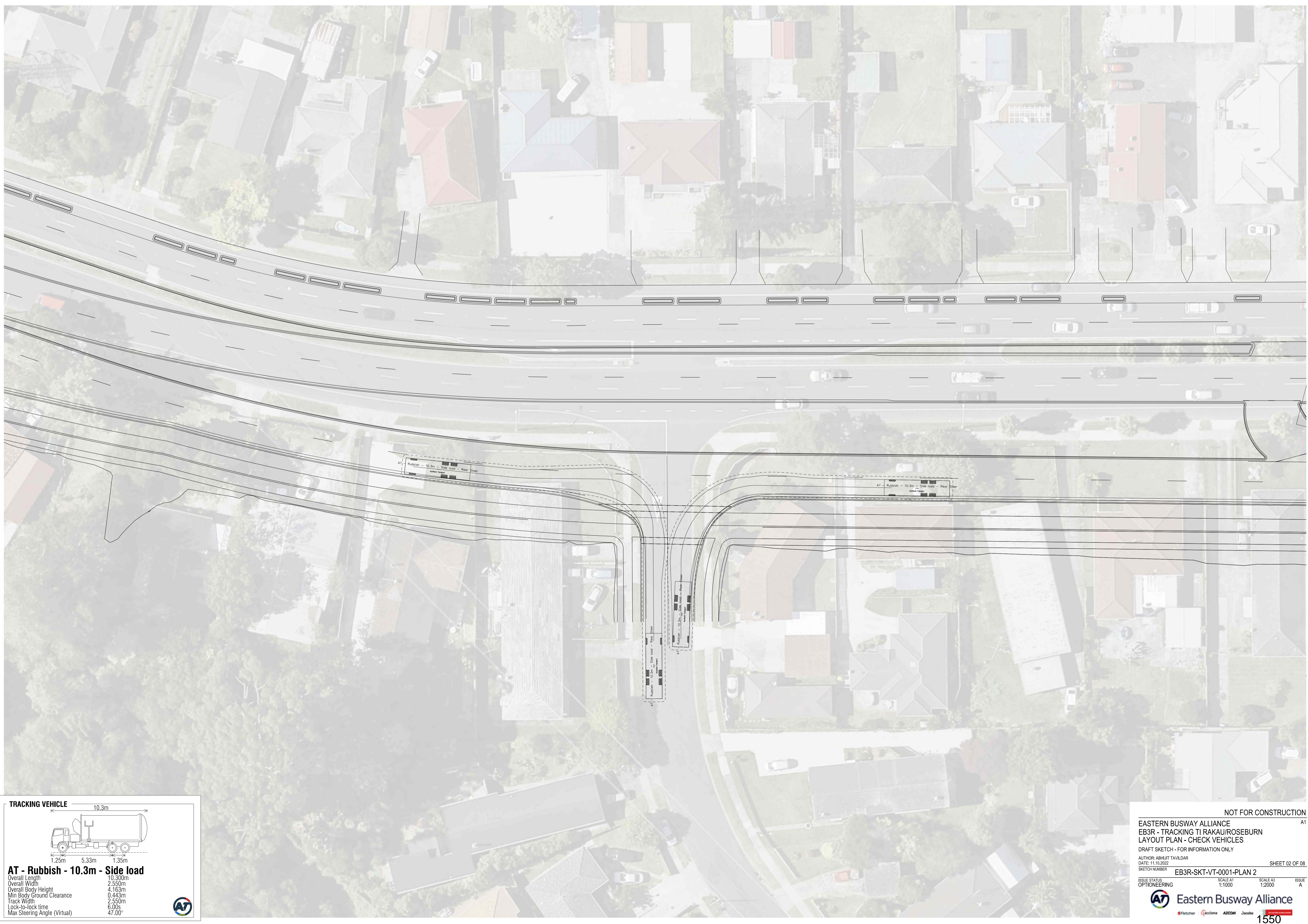
AUTHOR: ABHIJIT TAVILDAR
 DATE: 11.10.2022
 SKETCH NUMBER: EB3R-SKT-VT-0001-PLAN 1

ISSUE STATUS: OPTIONEERING

SCALE A1	SCALE A3	ISSUE
1:1000	1:2000	A

Eastern Busway Alliance

1549



TRACKING VEHICLE

AT - Rubbish - 10.3m - Side load

Overall Length	10.300m
Overall Width	2.550m
Overall Body Height	4.183m
Min Body Ground Clearance	0.443m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	47.00°

NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TI RAKAU/ROSEBURN
LAYOUT PLAN - CHECK VEHICLES

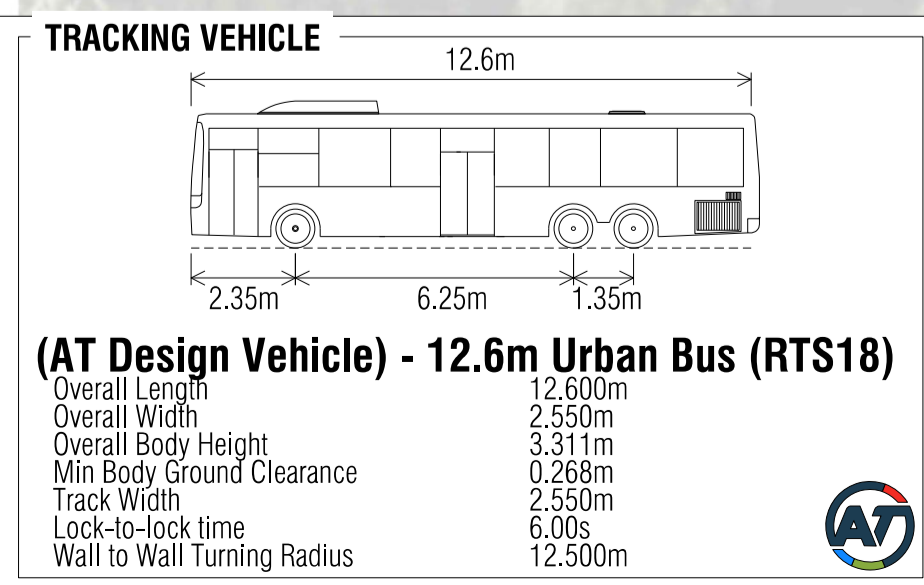
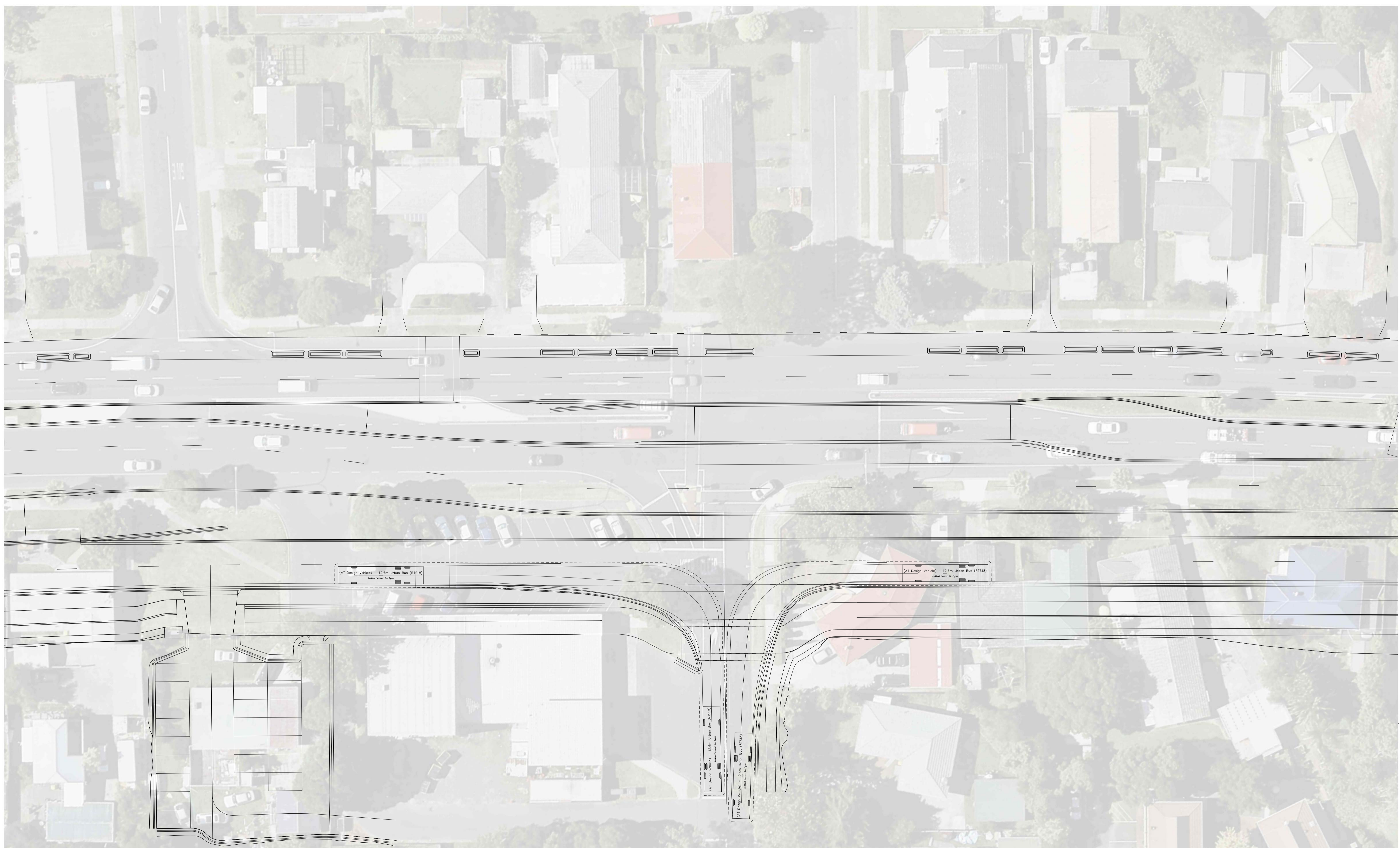
DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: ABHIJIT TAVILDAR SHEET 02 OF 08
 DATE: 11.10.2022
 SKETCH NUMBER: EB3R-SKT-VT-0001-PLAN 2

ISSUE STATUS	SCALE A1	SCALE A3	ISSUE
OPTIONEERING	1:1000	1:2000	A

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1550



NOT FOR CONSTRUCTION ^{A1}

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TI RAKAU/EDGEWATER WEST
LAYOUT PLAN - DESIGN VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY

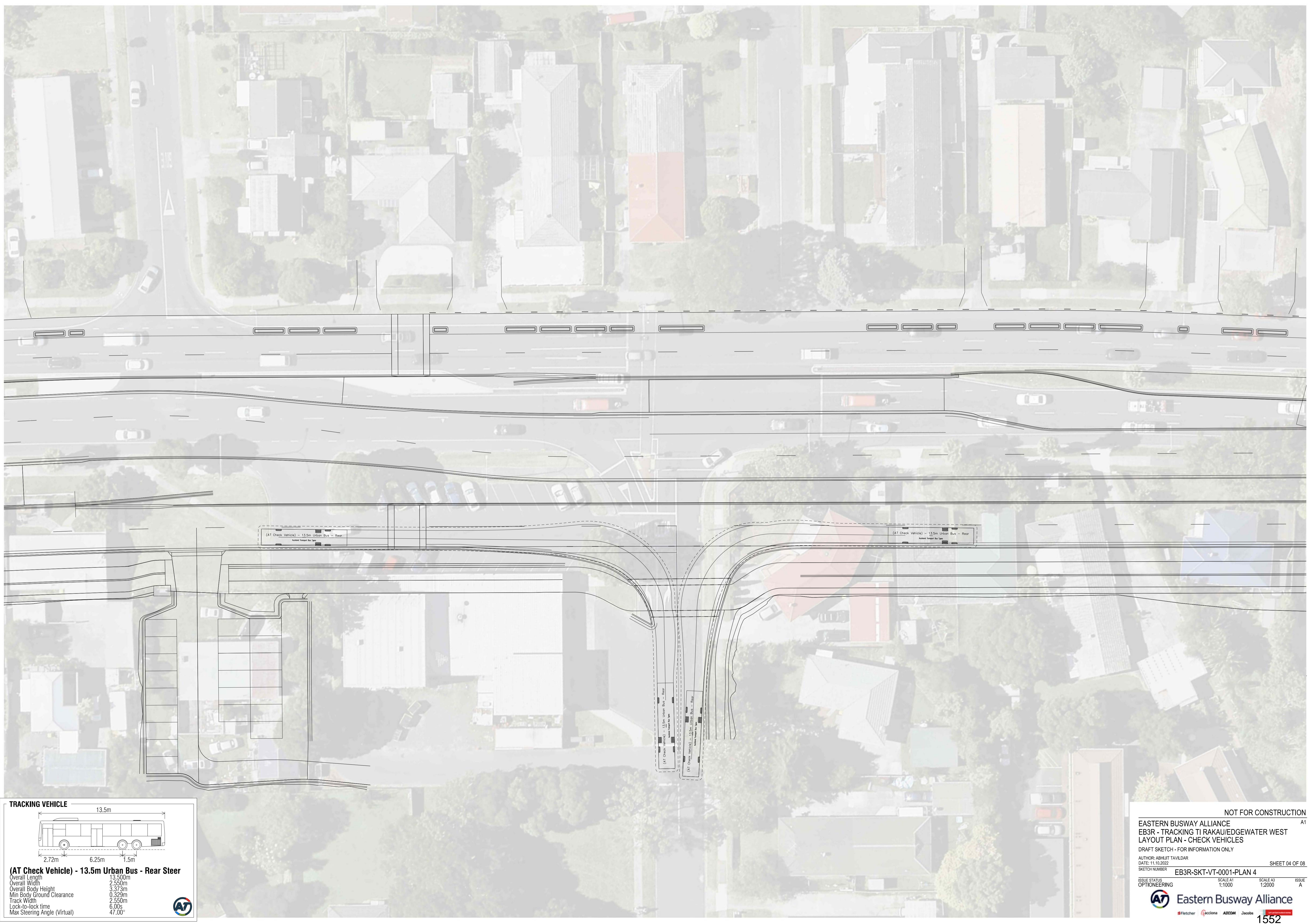
AUTHOR: ABHIJIT TAVILDAR
 DATE: 11.10.2022
 SKETCH NUMBER: EB3R-SKT-VT-0001-PLAN 3

ISSUE STATUS: OPTONEERING

SCALE A1 1:1000	SCALE A3 1:2000	SCALE A A
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1551



TRACKING VEHICLE

(AT Check Vehicle) - 13.5m Urban Bus - Rear Steer

Overall Length	13.500m
Overall Width	2.550m
Overall Body Height	3.373m
Min Body Ground Clearance	0.329m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	47.00°

NOT FOR CONSTRUCTION ^{A1}

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TI RAKAU/EDGEWATER WEST
LAYOUT PLAN - CHECK VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: ABHIJIT TAVILDAR
 DATE: 11.10.2022
 SKETCH NUMBER: EB3R-SKT-VT-0001-PLAN 4

ISSUE STATUS: OPTONEERING

SCALE A1	SCALE A3	SCALE A4
1:1000	1:2000	1:2000
		A

SHEET 04 OF 08

1552



TRACKING VEHICLE

AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

NOT FOR CONSTRUCTION ^{A1}

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TI RAKAU/WHEATLEY AVENUE
LAYOUT PLAN - DESIGN VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: ABHIJIT TAVILDAR
 DATE: 11.10.2022
 SHEET 05 OF 08

SKETCH NUMBER: **EB3R-SKT-VT-0001-PLAN 5**

ISSUE STATUS	SCALE A1	SCALE A3	ISSUE
OPTONEERING	1:1000	1:2000	A

Eastern Busway Alliance

1553



TRACKING VEHICLE

AT - Rubbish - 10.3m - Side load

Overall Length	10.300m
Overall Width	2.550m
Overall Body Height	4.183m
Min Body Ground Clearance	0.443m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	47.00°

NOT FOR CONSTRUCTION ^{A1}

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TI RAKAU/WHEATLEY AVENUE
LAYOUT PLAN - CHECK VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: ABHIJIT TAVILDAR
 DATE: 11.10.2022
 SHEET 06 OF 08

SKETCH NUMBER: **EB3R-SKT-VT-0001-PLAN 6**

ISSUE STATUS	SCALE A1	SCALE A3	ISSUE
OPTONEERING	1:1000	1:2000	A

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1554



TRACKING VEHICLE

AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TI RAKAU/EDGEWATER EAST
LAYOUT PLAN - DESIGN VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: ABHIJIT TAVILDAR SHEET 07 OF 08
 DATE: 11.10.2022
 SKETCH NUMBER: EB3R-SKT-VT-0001-PLAN 7

ISSUE STATUS	SCALE A1	SCALE A3	ISSUE
OPTONEERING	1:1000	1:2000	A

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1555



TRACKING VEHICLE

AT - Rubbish - 10.3m - Side load

Overall Length	10.300m
Overall Width	2.550m
Overall Body Height	4.183m
Min Body Ground Clearance	0.443m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	47.00°

NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TI RAKAU/EDGEWATER EAST
LAYOUT PLAN - CHECK VEHICLES

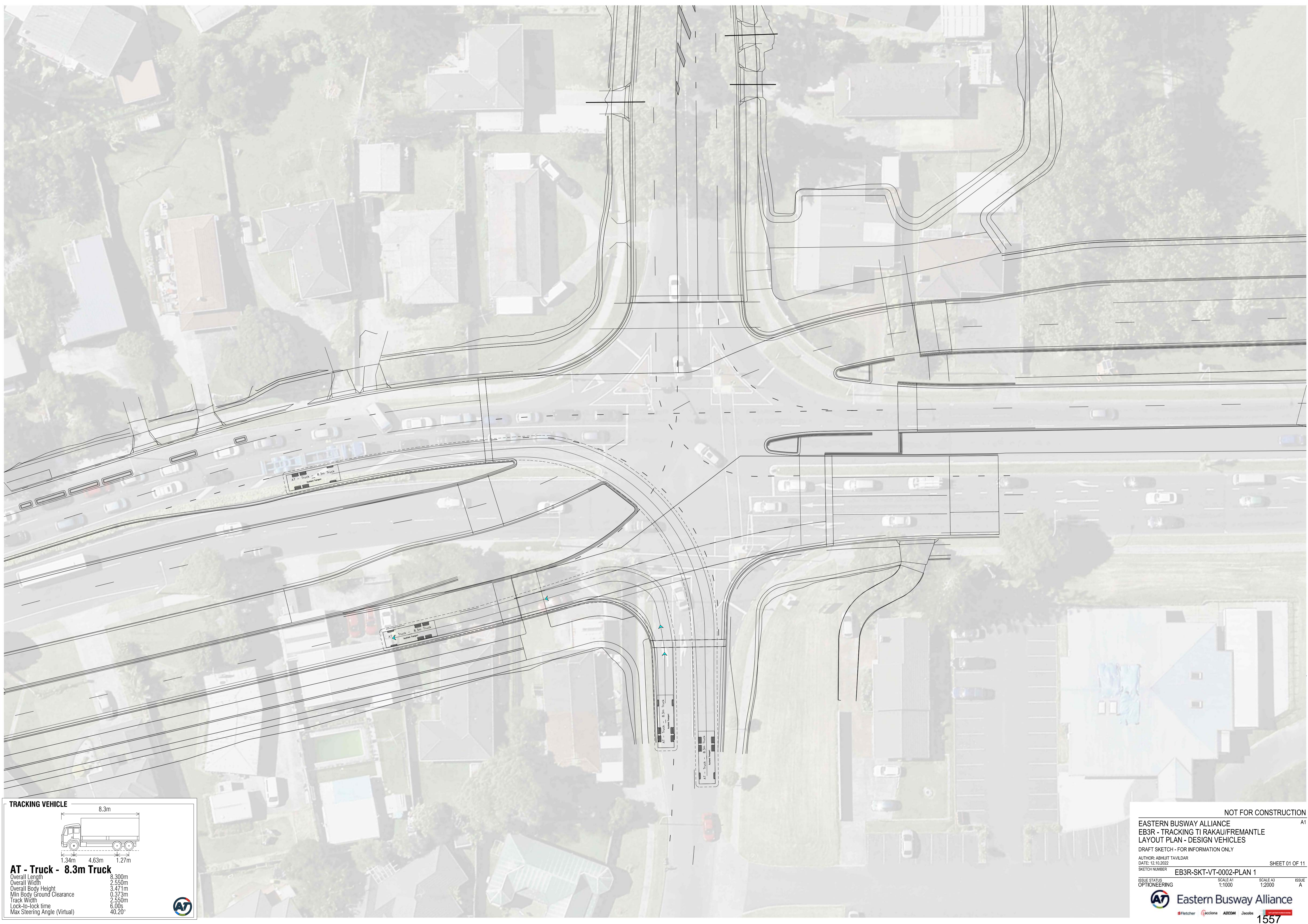
DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: ABHIJIT TAVILDAR
 DATE: 11.10.2022
 SHEET NUMBER: EB3R-SKT-VT-0001-PLAN 8
 SHEET 08 OF 08

ISSUE STATUS	SCALE A1	SCALE A3	ISSUE
OPTIONEERING	1:1000	1:2000	A

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1556



TRACKING VEHICLE

AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TI RAKAU/FREMANTLE
LAYOUT PLAN - DESIGN VEHICLES

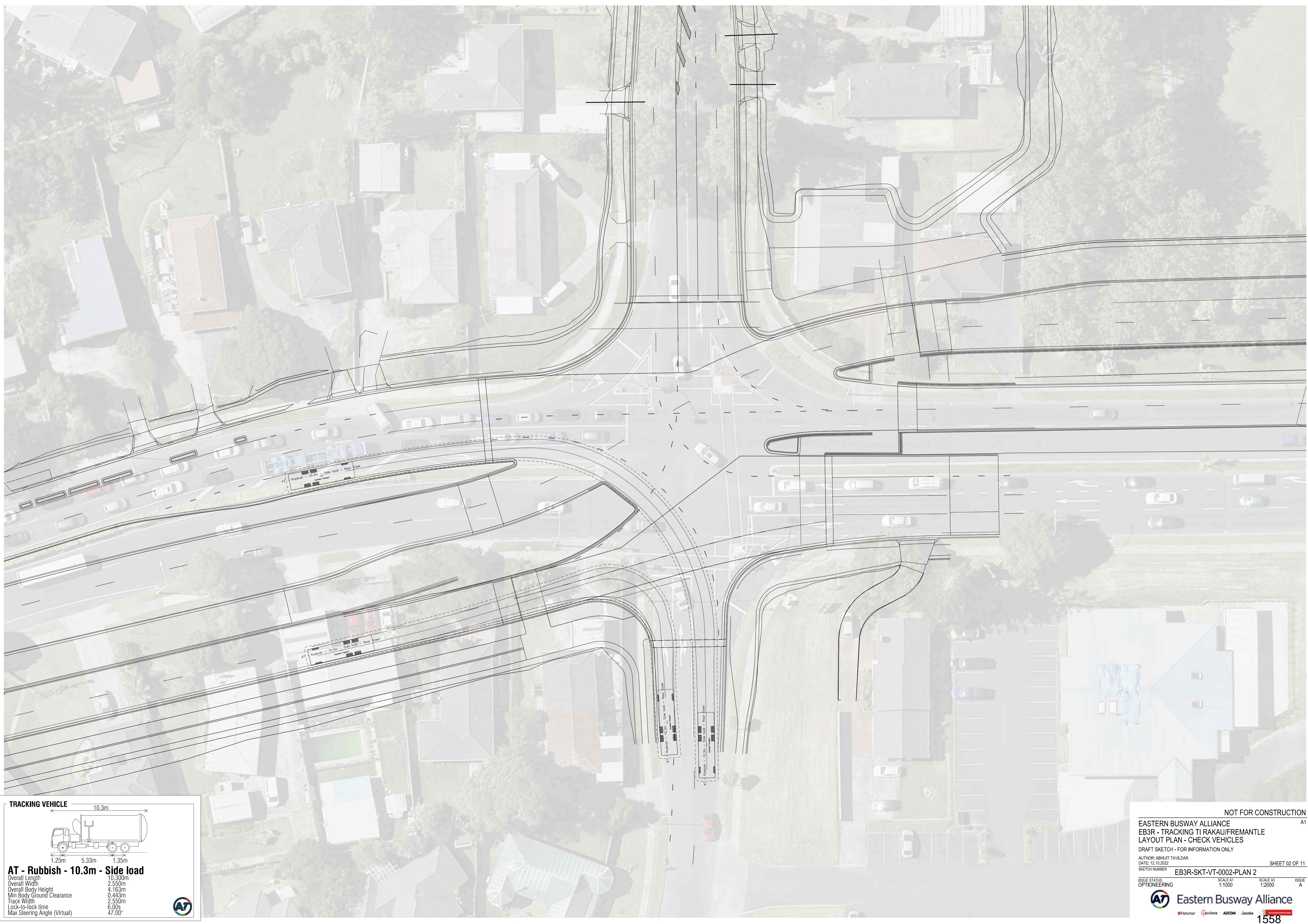
DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: ABHIJIT TAVILDAR SHEET 01 OF 11
 DATE: 12.10.2022
 SKETCH NUMBER: EB3R-SKT-VT-0002-PLAN 1

ISSUE STATUS	SCALE A1	SCALE A3	ISSUE
OPTONEERING	1:1000	1:2000	A

Eastern Busway Alliance

1557



TRACKING VEHICLE

AT - Rubbish - 10.3m - Side load

Overall Length	10.300m
Overall Width	2.550m
Overall Body Height	4.183m
Min Body Ground Clearance	0.443m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	47.00°

NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TI RAKAU/FREMANTLE
LAYOUT PLAN - CHECK VEHICLES

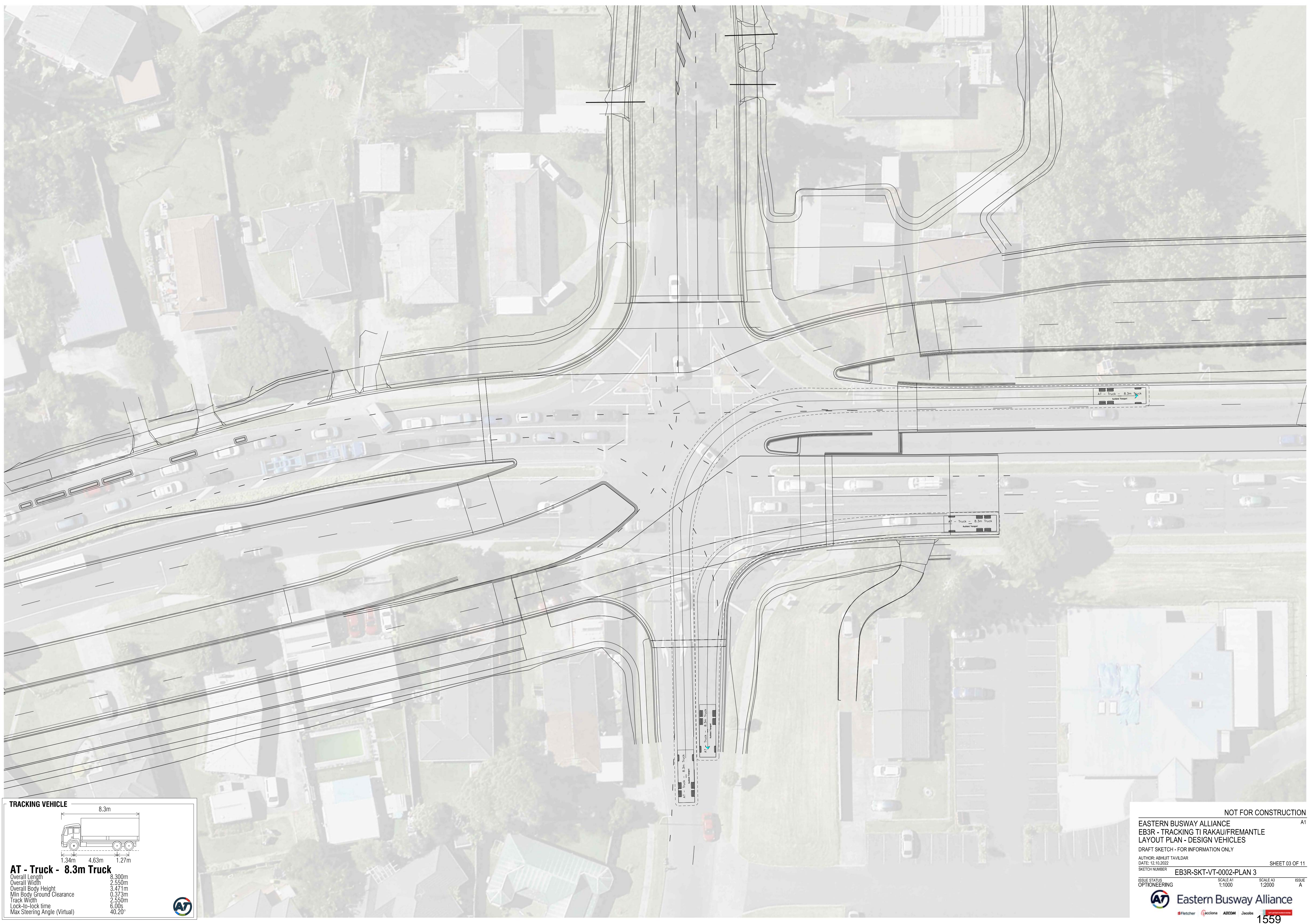
DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: ABHIJIT TAVILDAR SHEET 02 OF 11
 DATE: 12.10.2022
 SKETCH NUMBER: EB3R-SKT-VT-0002-PLAN 2

ISSUE STATUS	SCALE A1	SCALE A3
OPTIONEERING	1:1000	1:2000
		ISSUE A

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1558



TRACKING VEHICLE

AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TI RAKAU/FREMANTLE
LAYOUT PLAN - DESIGN VEHICLES

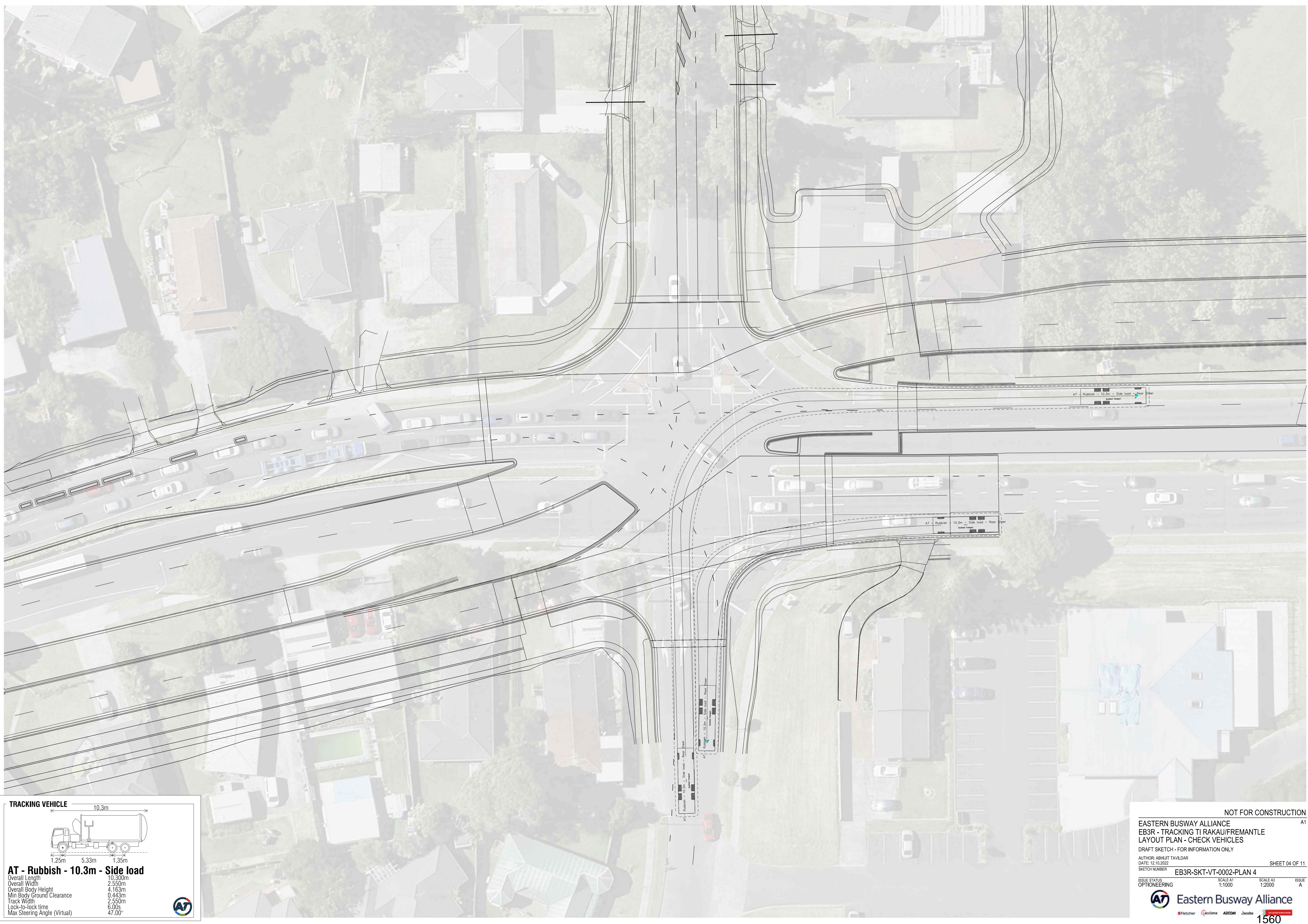
DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: ABHIJIT TAVILDAR SHEET 03 OF 11
 DATE: 12.10.2022
 SKETCH NUMBER: EB3R-SKT-VT-0002-PLAN 3

ISSUE STATUS	SCALE A1	SCALE A3	ISSUE
OPTONEERING	1:1000	1:2000	A

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1559



TRACKING VEHICLE

AT - Rubbish - 10.3m - Side load

Overall Length	10.300m
Overall Width	2.550m
Overall Body Height	4.183m
Min Body Ground Clearance	0.443m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	47.00°

NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TI RAKAU/FREMANTLE
LAYOUT PLAN - CHECK VEHICLES

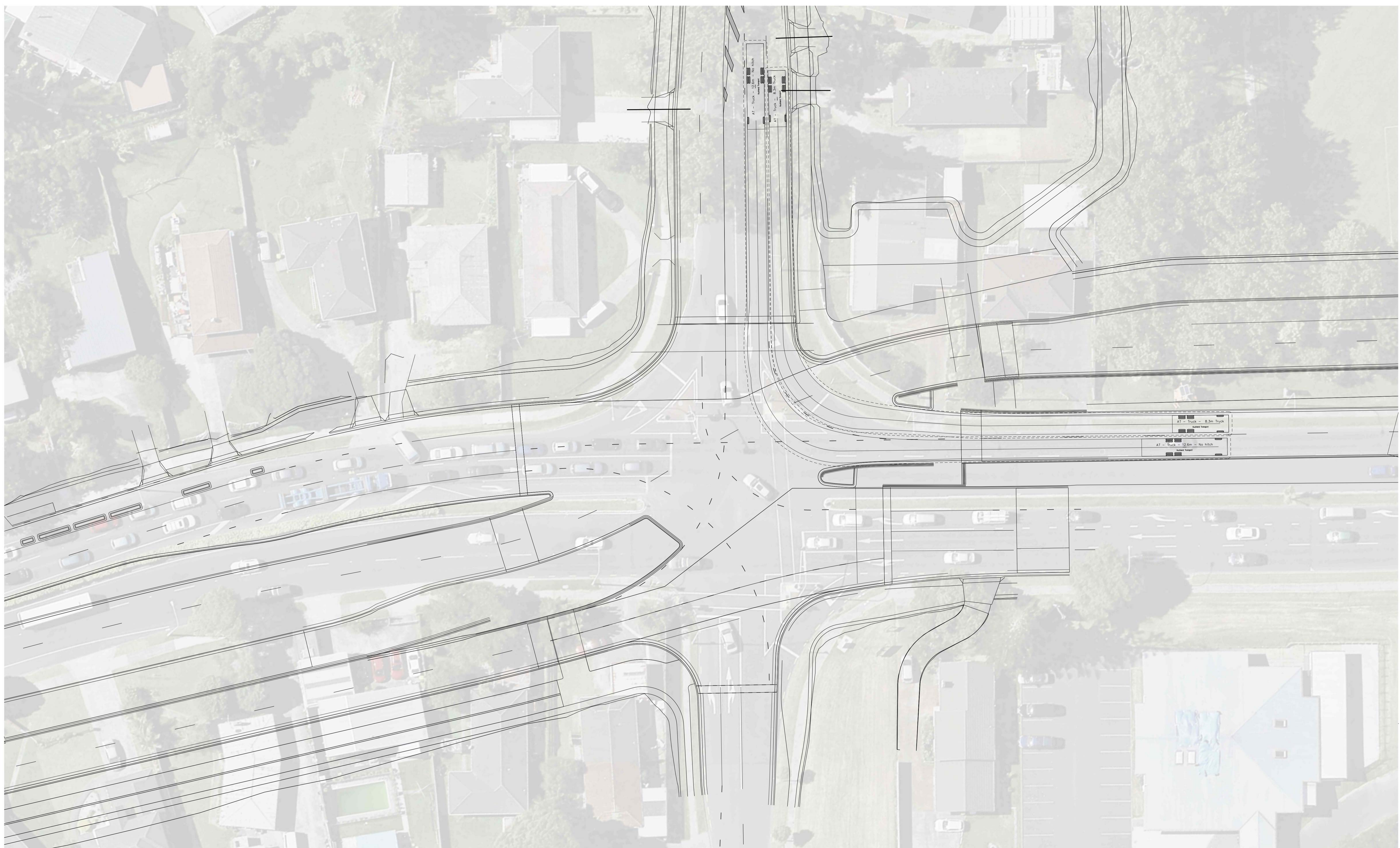
DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: ABHIJIT TAVILDAR SHEET 04 OF 11
 DATE: 12.10.2022
 SKETCH NUMBER: EB3R-SKT-VT-0002-PLAN 4

ISSUE STATUS	SCALE A1	SCALE A3	ISSUE
OPTONEERING	1:1000	1:2000	A

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1560



TRACKING VEHICLE

AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

TRACKING VEHICLE

AT - Truck - 12.6m - No hitch

Overall Length	12.600m
Overall Width	2.550m
Overall Body Height	4.249m
Min Body Ground Clearance	0.385m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Wheel Angle	49.00°

NOT FOR CONSTRUCTION

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TI RAKAU/GOSSAMER
LAYOUT PLAN - DESIGN VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: ABHIJIT TAVILDAR
 DATE: 12.10.2022
 SHEET 05 OF 11

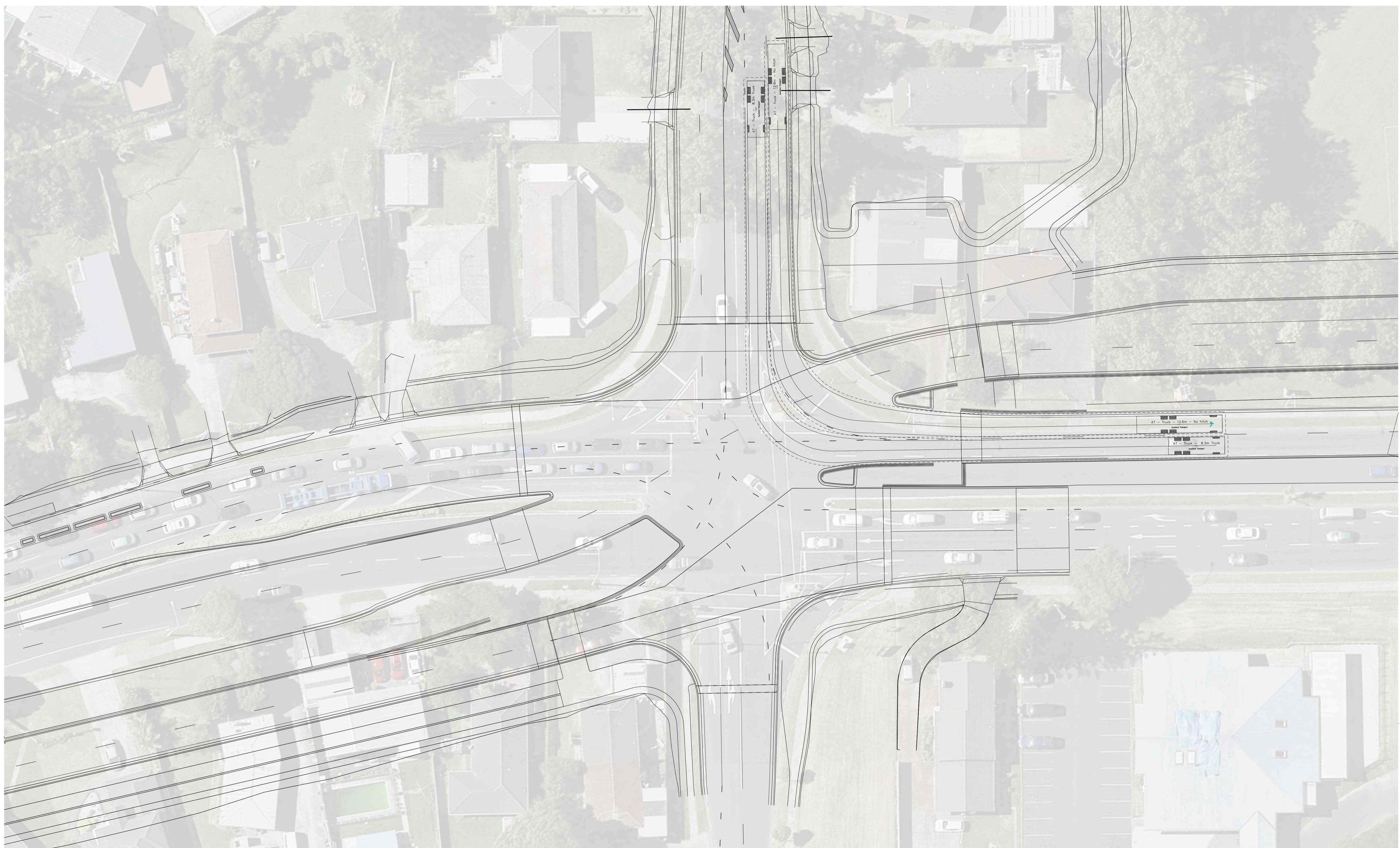
SKETCH NUMBER: **EB3R-SKT-VT-0002-PLAN 5**

ISSUE STATUS: OPTIONEERING

SCALE A1	SCALE A3	ISSUE
1:1000	1:2000	A

Eastern Busway Alliance

1561



TRACKING VEHICLE

AT - Truck - 12.6m - No hitch

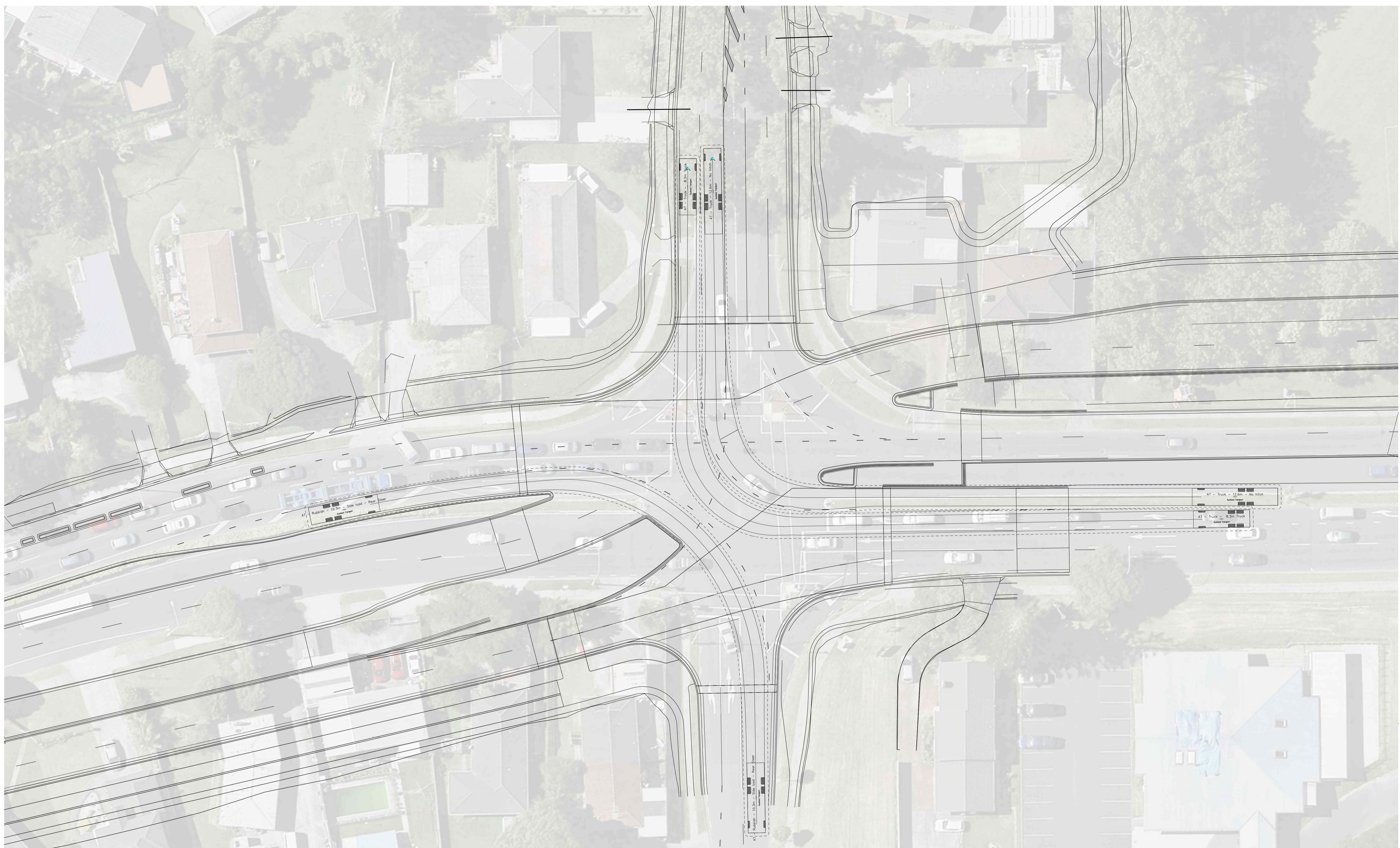
Overall Length	12.600m
Overall Width	2.550m
Overall Body Height	4.249m
Min Body Ground Clearance	0.385m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Wheel Angle	49.00°

TRACKING VEHICLE

AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

AT - Truck - 12.6m - No hitch
 AT - Truck - 8.3m Truck



TRACKING VEHICLE

AT - Rubbish - 10.3m - Side load

Overall Length	10.300m
Overall Width	2.550m
Overall Body Height	4.183m
Min Body Ground Clearance	0.443m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	47.00°

TRACKING VEHICLE

AT - Truck - 12.6m - No hitch

Overall Length	12.600m
Overall Width	2.550m
Overall Body Height	4.249m
Min Body Ground Clearance	0.385m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Wheel Angle	49.00°

TRACKING VEHICLE

AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

NOT FOR CONSTRUCTION

EASTERN BUSWAY ALLIANCE ^{A1}
EB3R - TRACKING TI RAKAU/GOSSAMER/FREMANTLE
LAYOUT PLAN - DESIGN VEHICLES

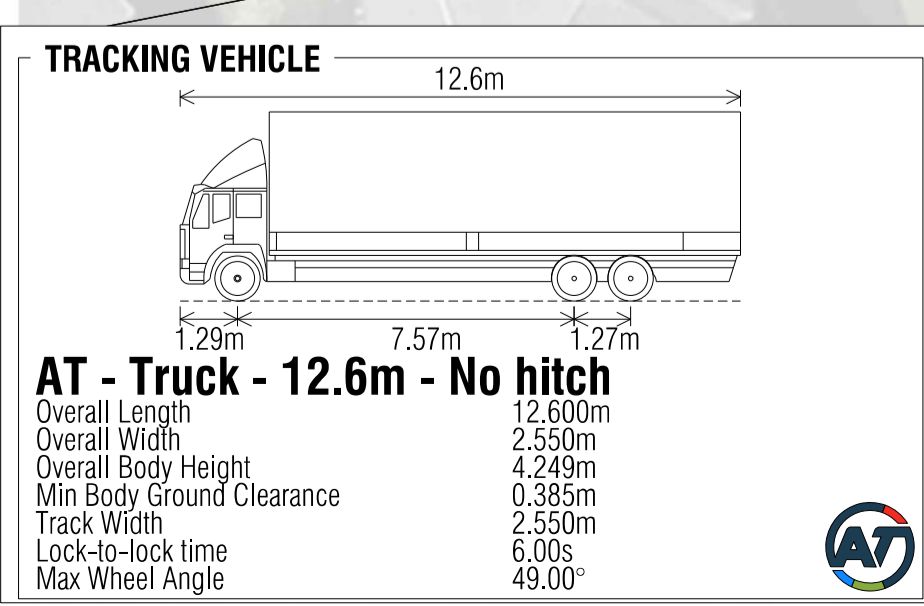
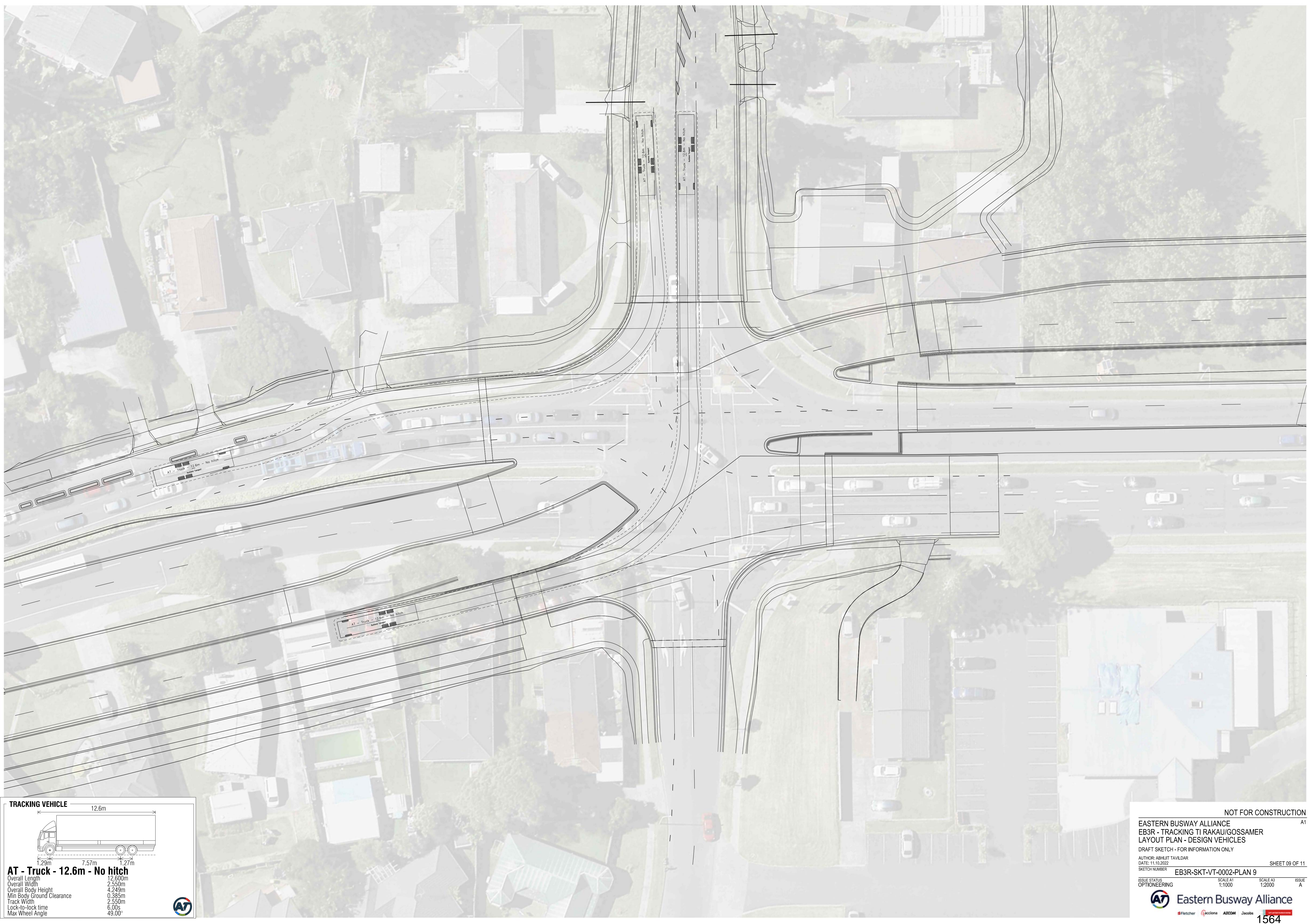
DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: ABHIJIT TAVILDAR
 DATE: 13.10.2022
 SHEET NUMBER: EB3R-SKT-VT-0002-PLAN 8
 SHEET 08 OF 11

ISSUE STATUS	SCALE A1	SCALE A3
OPTIONEERING	1:1000	1:2000
		ISSUE A

Eastern Busway Alliance

1563



NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TI RAKAU/GOSSAMER
LAYOUT PLAN - DESIGN VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY

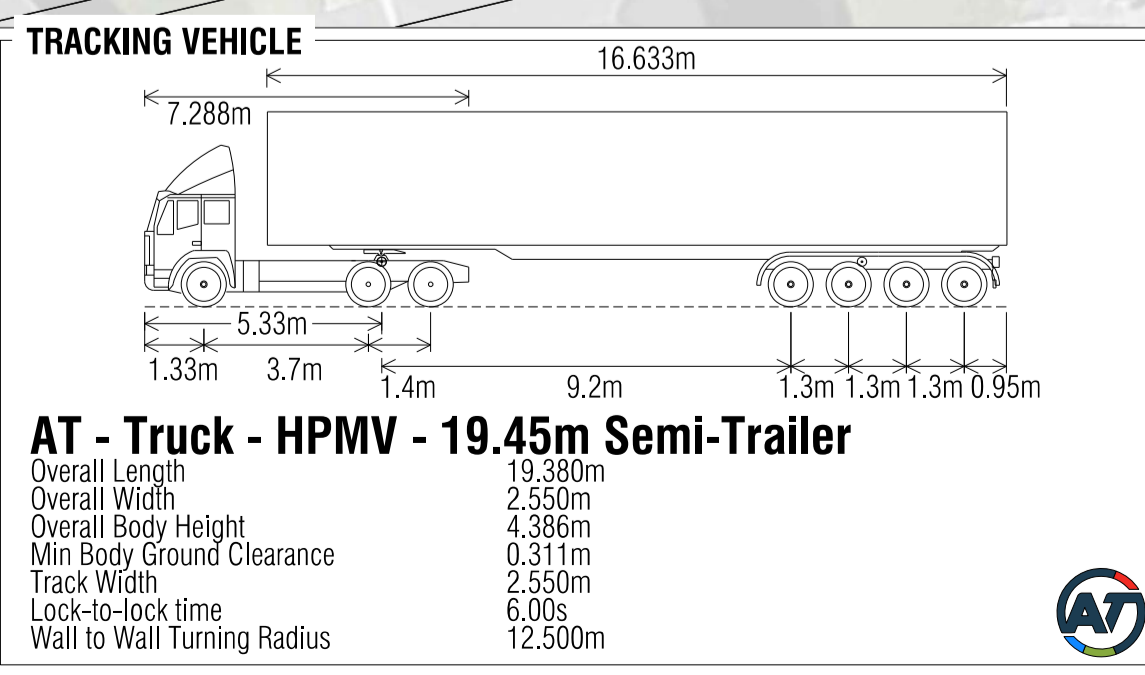
AUTHOR: ABHIJIT TAVILDAR SHEET 09 OF 11
 DATE: 11.10.2022
 SKETCH NUMBER: EB3R-SKT-VT-0002-PLAN 9

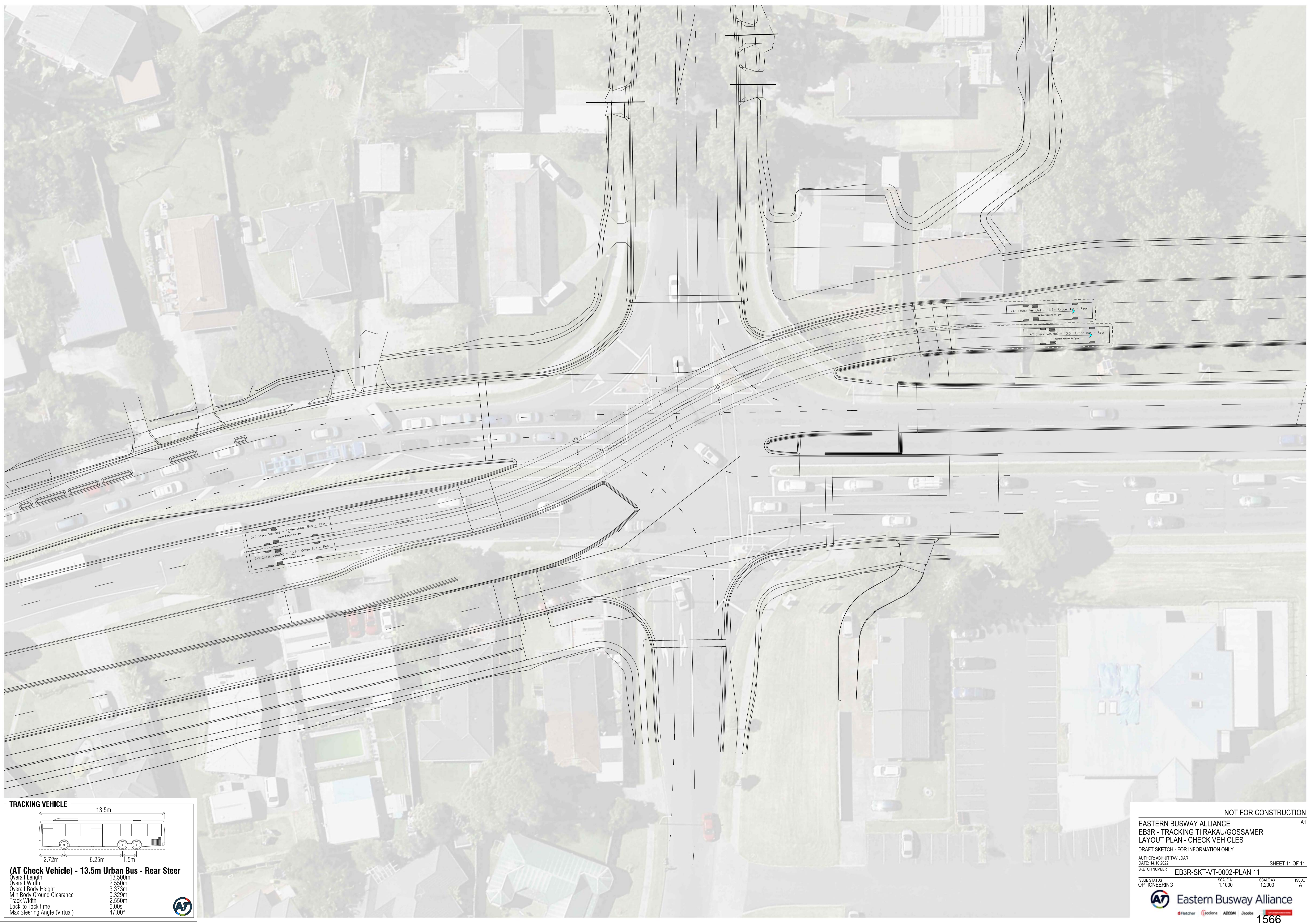
ISSUE STATUS	SCALE A1	SCALE A3
OPTONEERING	1:1000	1:2000
		ISSUE A

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1564





TRACKING VEHICLE

(AT Check Vehicle) - 13.5m Urban Bus - Rear Steer

Overall Length	13.500m
Overall Width	2.550m
Overall Body Height	3.373m
Min Body Ground Clearance	0.329m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	47.00°

NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING T1 RAKAU/GOSSAMER
LAYOUT PLAN - CHECK VEHICLES

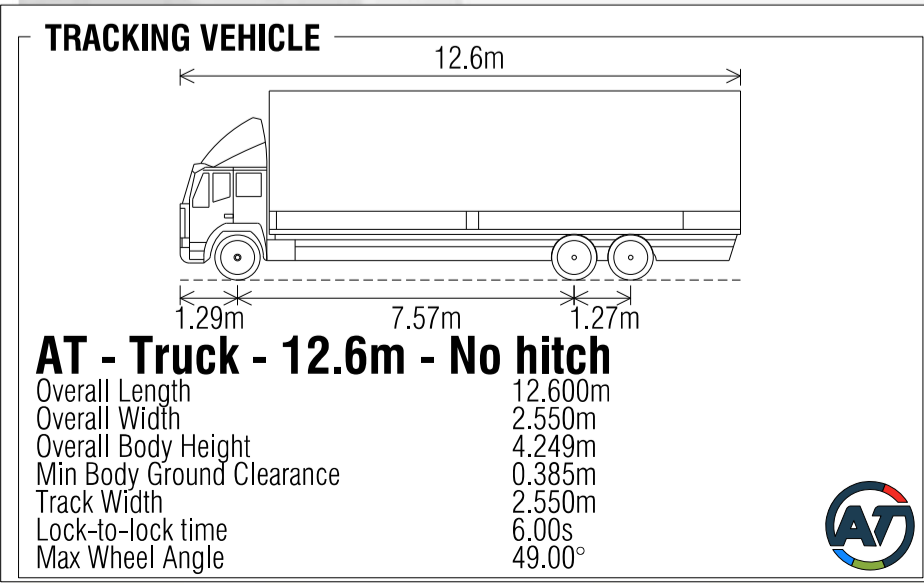
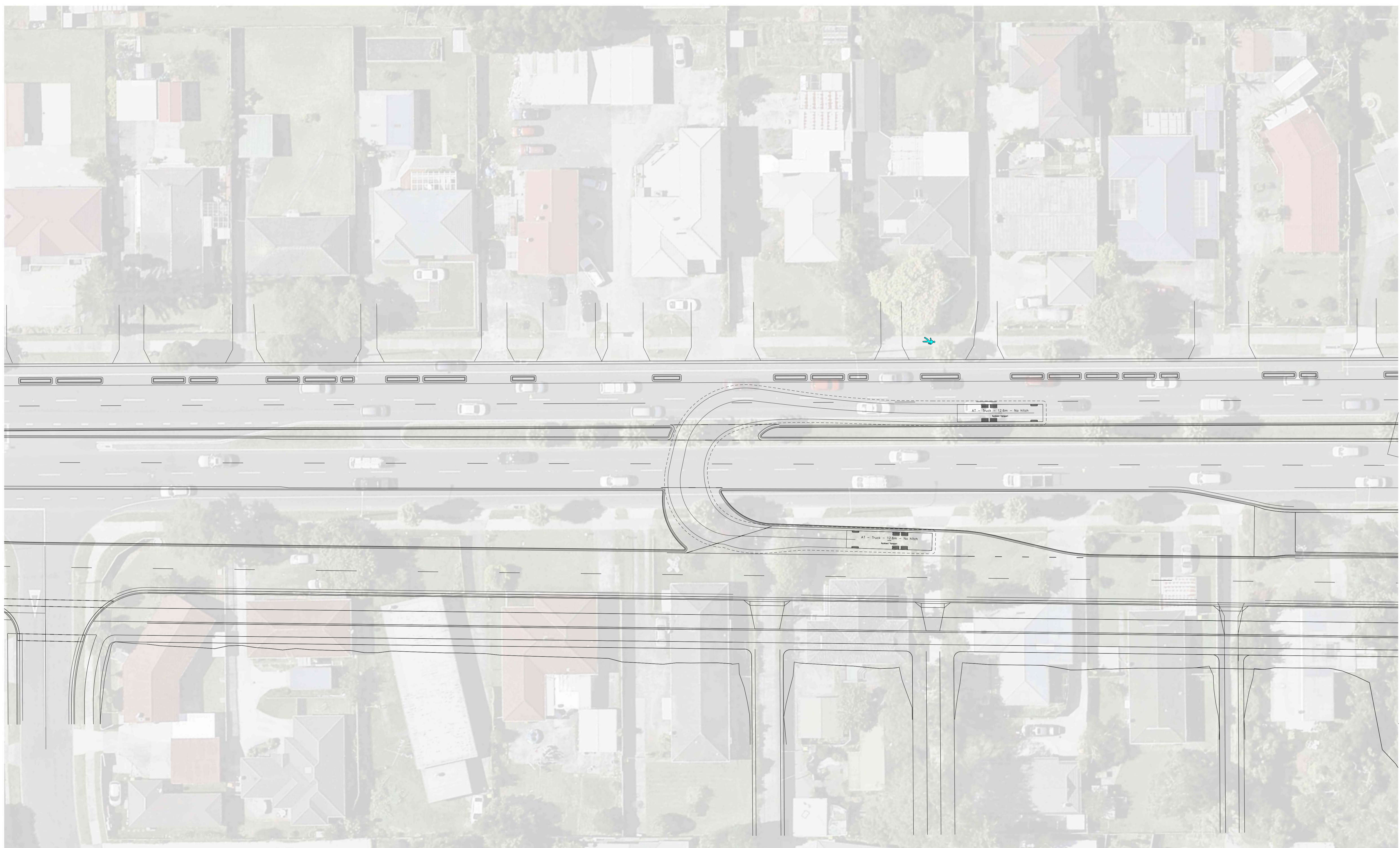
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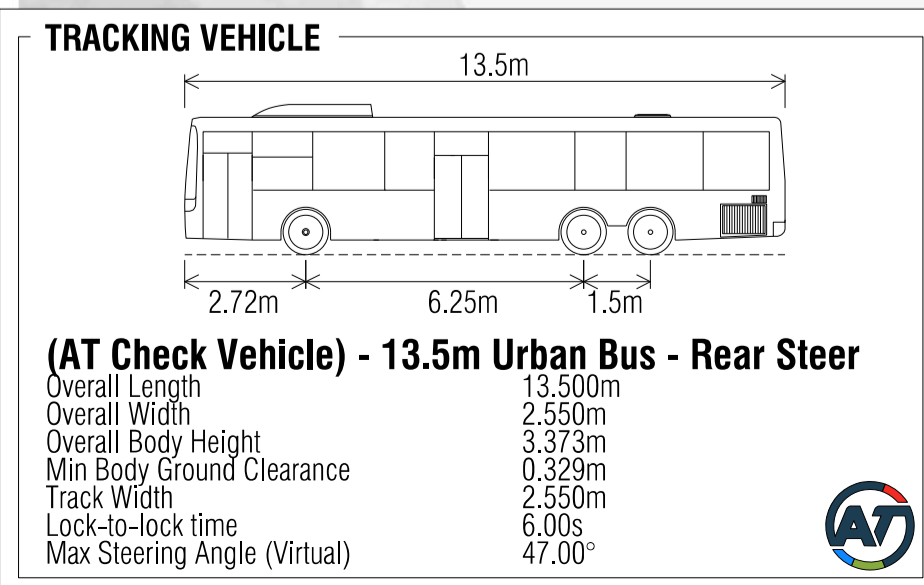
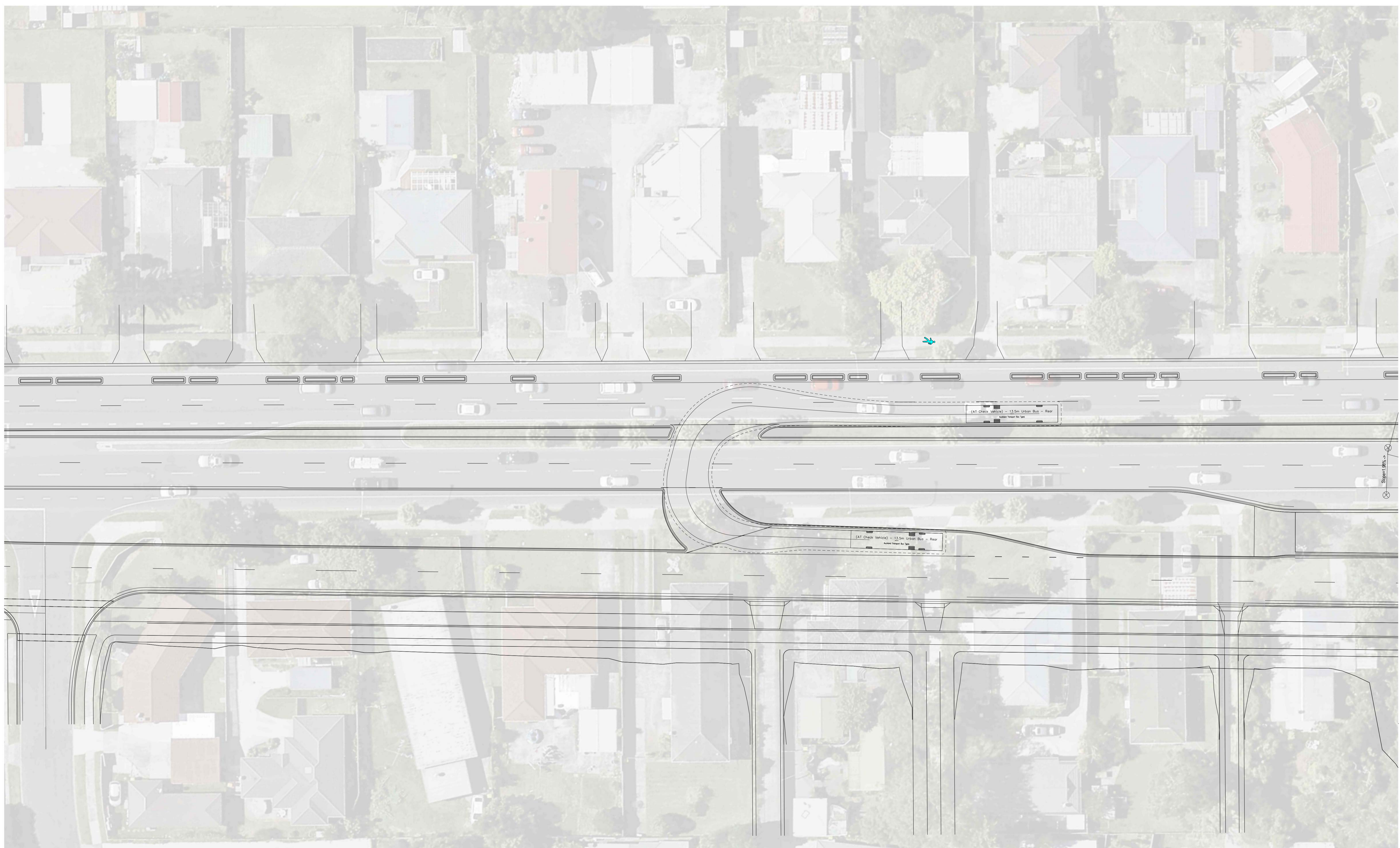
AUTHOR: ABHIJIT TAVILDAR SHEET 11 OF 11
 DATE: 14.10.2022
 SKETCH NUMBER: EB3R-SKT-VT-0002-PLAN 11

ISSUE STATUS	SCALE A1	SCALE A3	ISSUE
OPTONEERING	1:1000	1:2000	A

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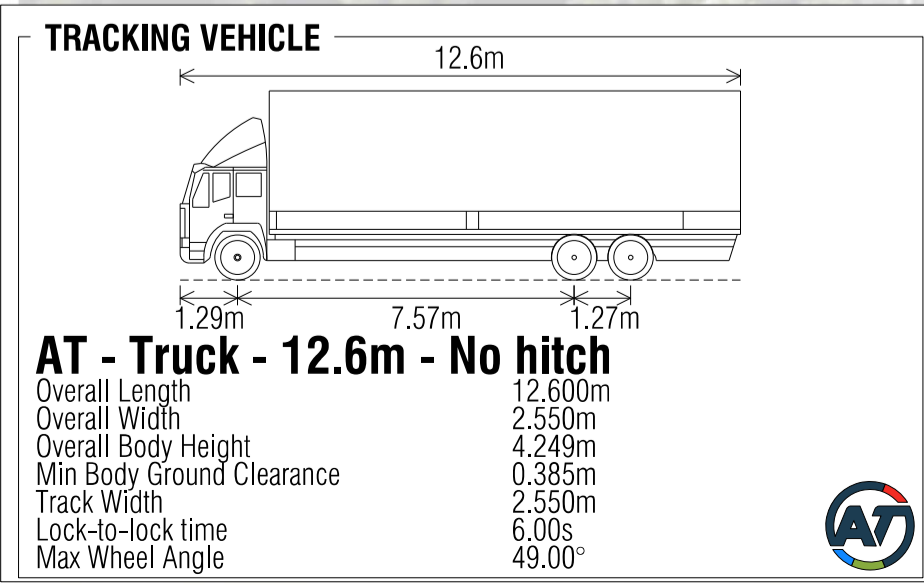
1566







NOT REQUIRED



NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TURN BAYS
LAYOUT PLAN - DESIGN VEHICLES

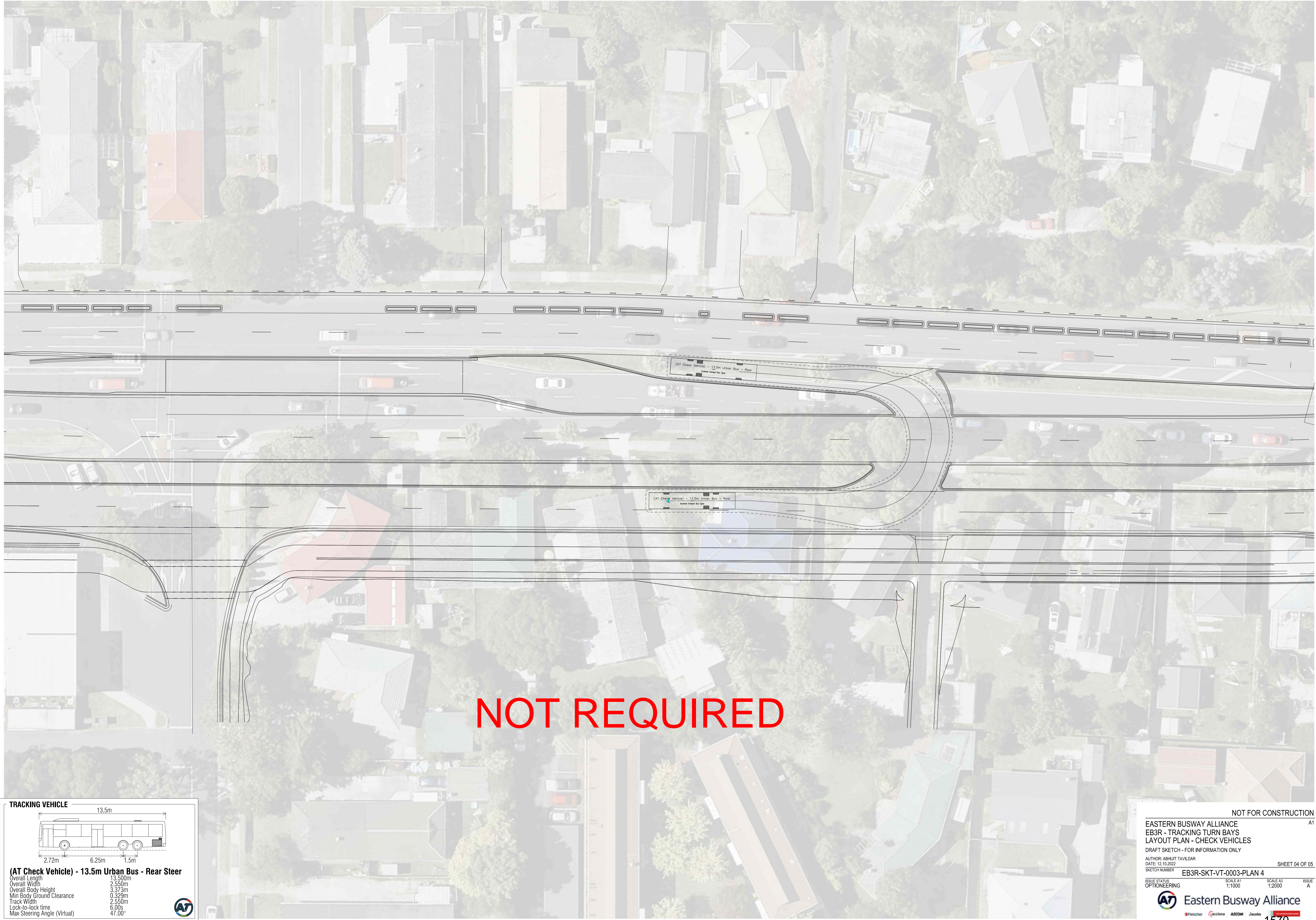
DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: ABHIJIT TAVILDAR
DATE: 13.10.2022
SKETCH NUMBER: EB3R-SKT-VT-0003-PLAN 3
ISSUE STATUS: OPTIONEERING

SCALE A1	SCALE A3	SCALE A4
1:1000	1:2000	1:2000
		ISSUE A

Eastern Busway Alliance

1569



NOT REQUIRED

TRACKING VEHICLE

(AT Check Vehicle) - 13.5m Urban Bus - Rear Steer

Overall Length	13.500m
Overall Width	2.550m
Overall Body Height	3.373m
Min Body Ground Clearance	0.329m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	47.00°

NOT FOR CONSTRUCTION

EASTERN BUSWAY ALLIANCE
 EB3R - TRACKING TURN BAYS
 LAYOUT PLAN - CHECK VEHICLES
 DRAFT SKETCH - FOR INFORMATION ONLY

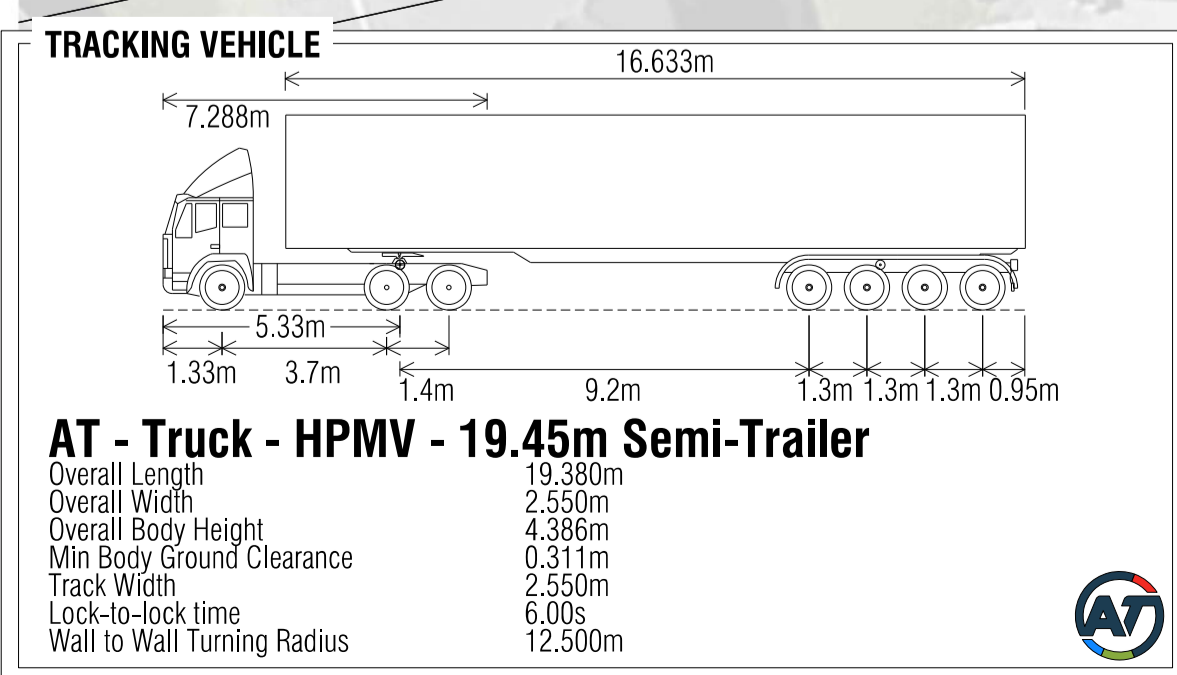
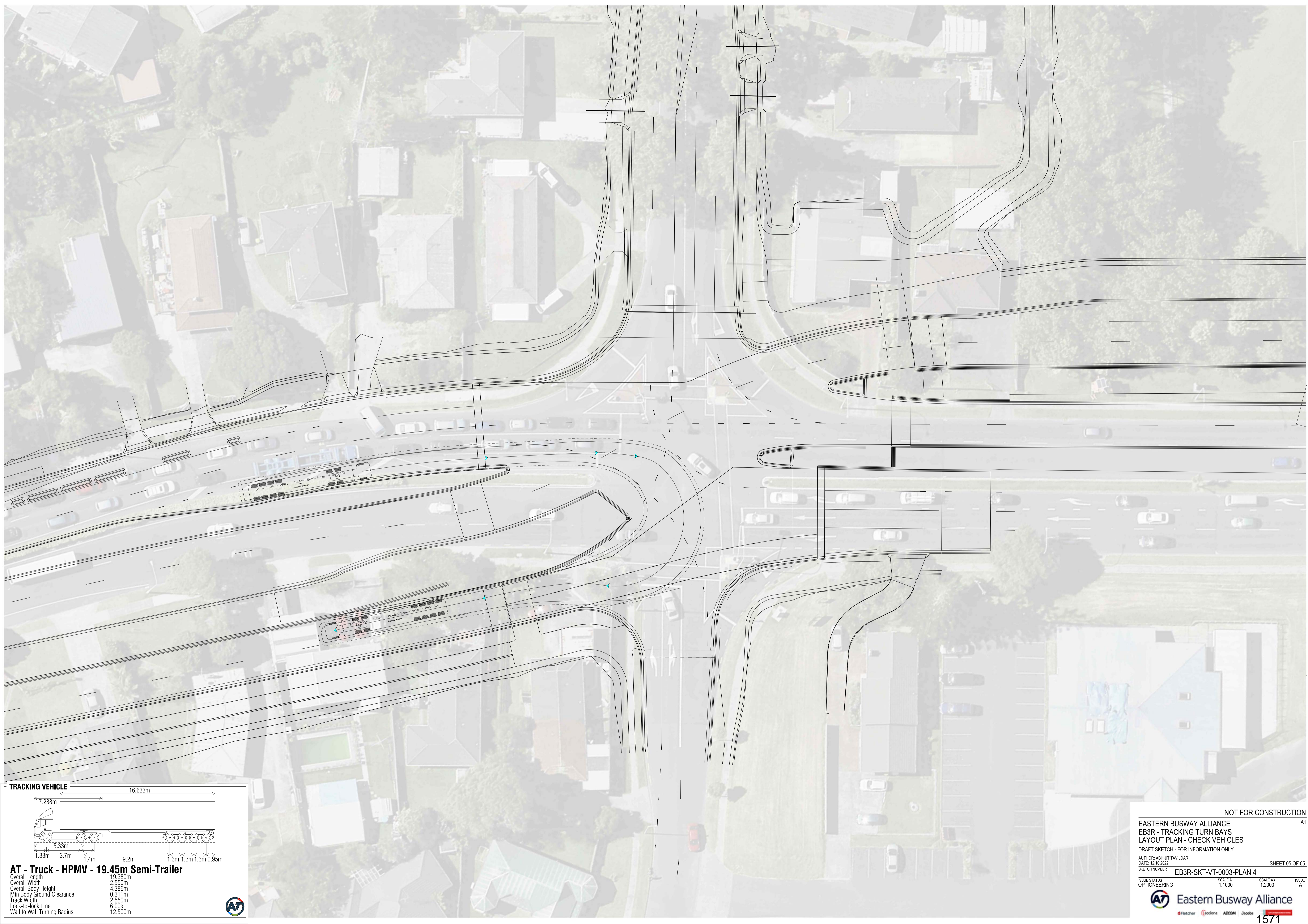
AUTHOR: ABHIJIT TAVILDAR
 DATE: 12.10.2022
 SKETCH NUMBER: EB3R-SKT-VT-0003-PLAN 4

ISSUE STATUS: OPTIONEERING

SCALE A1	SCALE A3	SCALE A4
1:1000	1:2000	1:2000
A	A	A

Eastern Busway Alliance

1570



NOT FOR CONSTRUCTION
A1

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TURN BAYS
LAYOUT PLAN - CHECK VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY

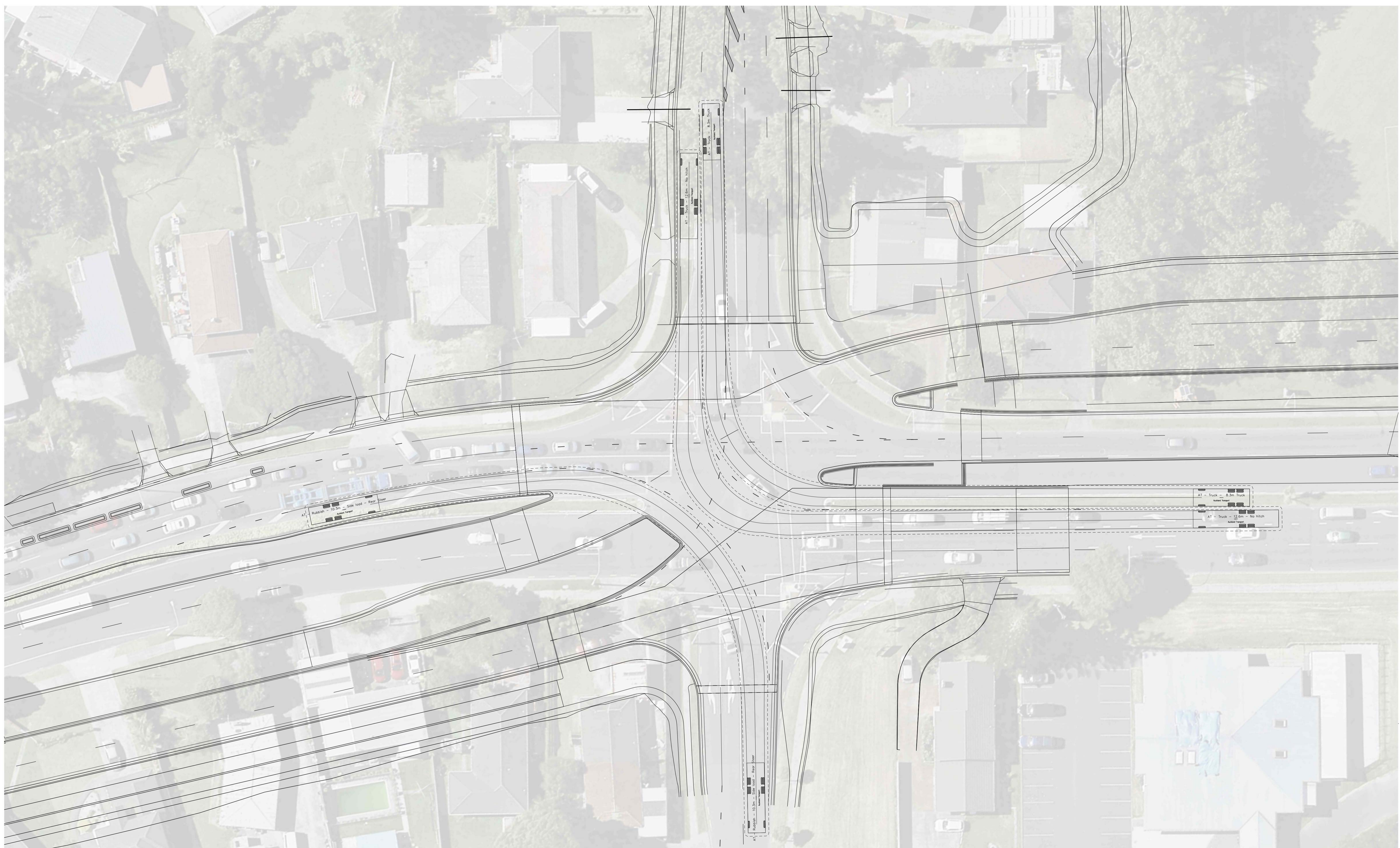
AUTHOR: ABHIJIT TAVILDAR
 DATE: 12.10.2022
 SKETCH NUMBER: EB3R-SKT-VT-0003-PLAN 4

SHEET 05 OF 05

ISSUE STATUS	SCALE A1	SCALE A3	ISSUE
OPTONEERING	1:1000	1:2000	A

Eastern Busway Alliance

1571



TRACKING VEHICLE 8.3m

AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

TRACKING VEHICLE 12.6m

AT - Truck - 12.6m - No hitch

Overall Length	12.600m
Overall Width	2.550m
Overall Body Height	4.249m
Min Body Ground Clearance	0.385m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Wheel Angle	49.00°

TRACKING VEHICLE 10.3m

AT - Rubbish - 10.3m - Side load

Overall Length	10.300m
Overall Width	2.550m
Overall Body Height	4.163m
Min Body Ground Clearance	0.443m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	47.00°

NOT FOR CONSTRUCTION

EASTERN BUSWAY ALLIANCE A1
EB3R - TRACKING TI RAKAU/GOSSAMER/FREMANTLE
LAYOUT PLAN - DESIGN VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: ABHIJIT TAVILDAR
 DATE: 12.10.2022
 SHEET 07 OF 11

SKETCH NUMBER: **EB3R-SKT-VT-0002-PLAN 7**

ISSUE STATUS	SCALE A1	SCALE A3	ISSUE
OPTIONEERING	1:1000	1:2000	A

Eastern Busway Alliance

1572



TRACKING VEHICLE

AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TI RAKAU/EDGEWATER EAST
LAYOUT PLAN - DESIGN VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY

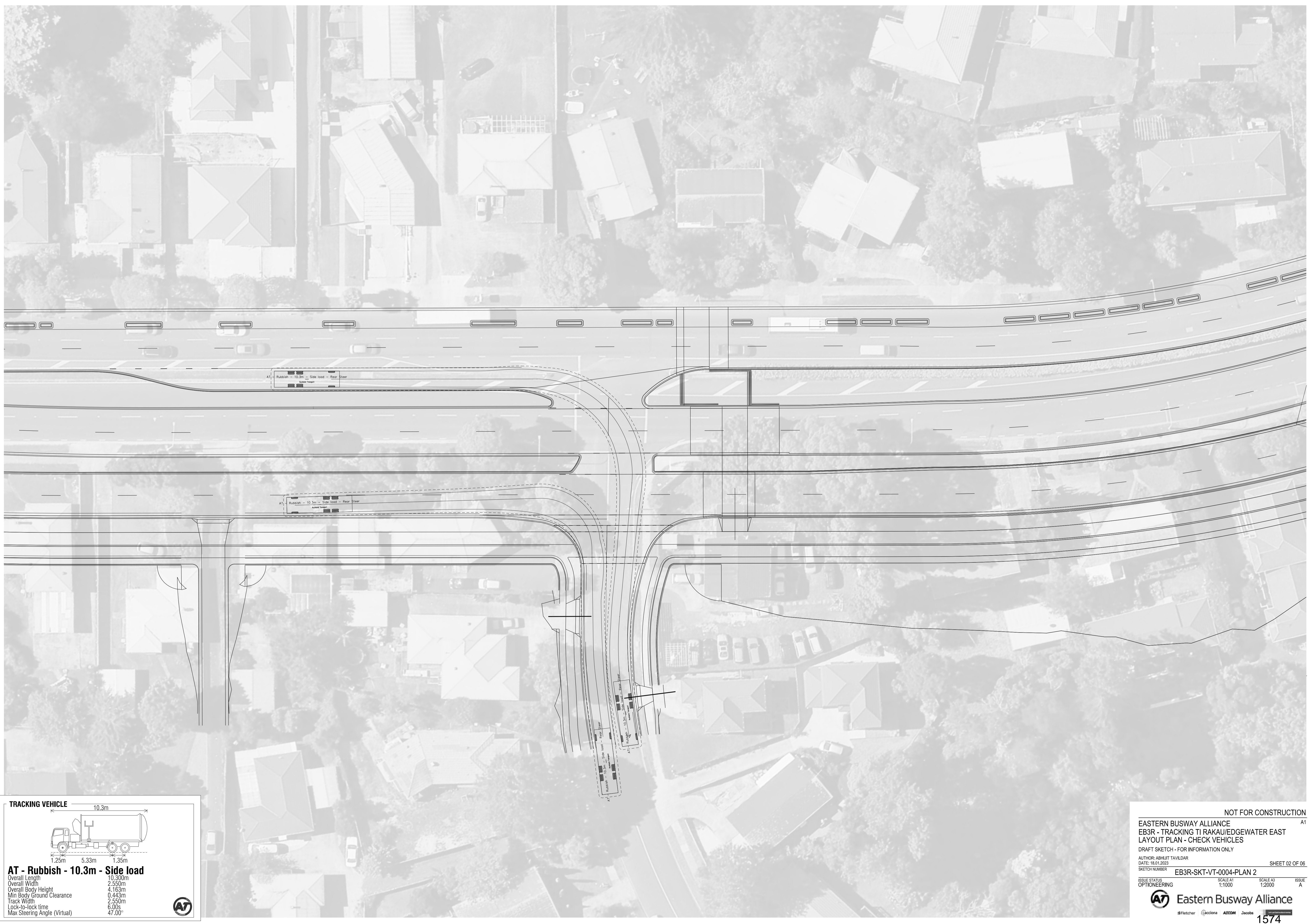
AUTHOR: ABHIJIT TAVILDAR SHEET 01 OF 06
 DATE: 18.01.2023
 SKETCH NUMBER: EB3R-SKT-VT-0004-PLAN 1

ISSUE STATUS	SCALE A1	SCALE A3	ISSUE
OPTONEERING	1:1000	1:2000	A

Eastern Busway Alliance

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1573



TRACKING VEHICLE

AT - Rubbish - 10.3m - Side load

Overall Length	10.300m
Overall Width	2.550m
Overall Body Height	4.183m
Min Body Ground Clearance	0.443m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	47.00°

NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TI RAKAU/EDGEWATER EAST
LAYOUT PLAN - CHECK VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: ABHIJIT TAVILDAR
 DATE: 18.01.2023
 SKETCH NUMBER: EB3R-SKT-VT-0004-PLAN 2

ISSUE STATUS: OPTIONEERING

SCALE A1	SCALE A3	SCALE A
1:1000	1:2000	

SHEET 02 OF 06

Eastern Busway Alliance

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1574



TRACKING VEHICLE

AT - Truck - 8.3m Truck

Overall Length	8.300m
Overall Width	2.550m
Overall Body Height	3.471m
Min Body Ground Clearance	0.373m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.20°

NOT FOR CONSTRUCTION ^{A1}

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TI RAKAU/EDGEWATER EAST
LAYOUT PLAN - DESIGN VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: ABHIJIT TAVILDAR
 DATE: 18.01.2023
 SKETCH NUMBER: EB3R-SKT-VT-0004-PLAN 3

ISSUE STATUS: OPTIONEERING

SCALE A1	SCALE A3	SCALE A
1:1000	1:2000	1:2000

SHEET 03 OF 06

Eastern Busway Alliance

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1575



TRACKING VEHICLE 12.6m

AT - Truck - 12.6m - No hitch

Overall Length	12.600m
Overall Width	2.550m
Overall Body Height	4.249m
Min Body Ground Clearance	0.385m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Wheel Angle	49.00°

TRACKING VEHICLE 10.3m

AT - Rubbish - 10.3m - Side load

Overall Length	10.300m
Overall Width	2.550m
Overall Body Height	4.163m
Min Body Ground Clearance	0.443m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	47.00°

NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TI RAKAU/EDGEWATER EAST
LAYOUT PLAN - CHECK VEHICLES

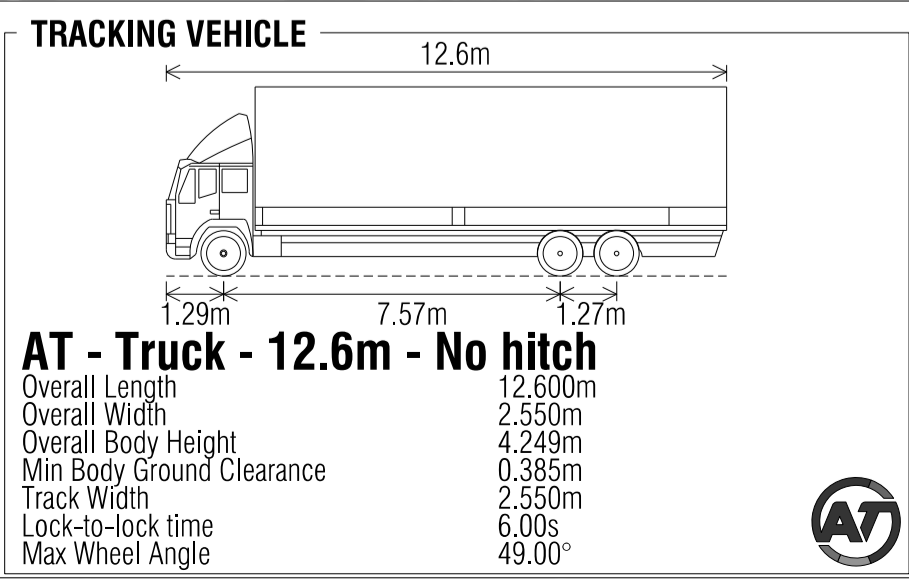
DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: ABHIJIT TAVILDAR SHEET 04 OF 06
 DATE: 18.01.2023
 SKETCH NUMBER: **EB3R-SKT-VT-0004-PLAN 4**

ISSUE STATUS	SCALE A1	SCALE A3	ISSUE
OPTIONEERING	1:1000	1:2000	A

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1576



NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TURN BAYS
LAYOUT PLAN - DESIGN VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: ABHIJIT TAVILDAR SHEET 05 OF 06
 DATE: 18.01.2023
 SKETCH NUMBER: EB3R-SKT-VT-0004-PLAN 5

ISSUE STATUS	SCALE A1	SCALE A3	ISSUE
OPTONEERING	1:1000	1:2000	A

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1577



TRACKING VEHICLE

(AT Check Vehicle) - 13.5m Urban Bus - Rear Steer

Overall Length	13.500m
Overall Width	2.550m
Overall Body Height	3.373m
Min Body Ground Clearance	0.329m
Track Width	2.550m
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	47.00°

NOT FOR CONSTRUCTION A1

EASTERN BUSWAY ALLIANCE
EB3R - TRACKING TURN BAYS
LAYOUT PLAN - CHECK VEHICLES

DRAFT SKETCH - FOR INFORMATION ONLY

AUTHOR: ABHIJIT TAVILDAR SHEET 06 OF 06
 DATE: 18.01.2023
 SKETCH NUMBER: EB3R-SKT-VT-0004-PLAN 6

ISSUE STATUS	SCALE A1	SCALE A3	ISSUE
OPTIONEERING	1:1000	1:2000	A

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1578

