JANUARY 2016

PROJECT N^{O} 151-09071-00

AIRPORT NOISE STUDY
BILLY BISHOP TORONTO CITY AIRPORT

TORONTO, ONTARIO

CONFIDENTIAL

Transport Canada

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Confidential

Project no: 151-09071-00
Date: January 29, 2016

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January 29, 2016

CONFIDENTIAL

Ms. Mary Louise Canning
Regional Manager, Funded Programs
Transport Canada
4900 Yonge St.
Toronto, Ontario M2N 6A5

Dear Ms. Canning,

Subject: Billy Bishop Toronto City Airport
Noise Exposure Contour – 2014 Actual Traffic
Final Report Submission

WSP is pleased to submit the final report of the above noted study. The analysis was undertaken utilizing actual Billy Bishop Toronto City Airport NAV CANADA Aircraft Movements Statistics for the 2014 calendar year and was completed utilizing the latest Transport Canada NEFcalc software (ver 2.0.6.1).

Based on the analysis undertaken, Noise Exposure contours for the 2014 calendar year comply with the requirements per the Tripartite Agreement. In all areas the 28 NEF contours remains entirely within the 1990 Official 25 NEF contours, attached to the Tripartite Agreement as Schedule F.

In accordance with the terms of reference, WSP confirms that the enclosed report is considered to be confidential under such time as released by Transport Canada.

If you have any questions regarding the enclosed, please do not hesitate to call.

Sincerely,

James P. Lindsey, M.Sc., C.M.
Director, Aviation

cc:
Encl.

P:\CYTZ 151-09071-00 BBTCA 2014 Noise Exp Contour Rpts\Clerical\Reports\CYTZ Transport Canada 2014 NEF ver1a 20160127.docx

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1 INTRODUCTION AND GUIDING PRINCIPLES

1.1 INTRODUCTION

The Billy Bishop Toronto City Airport (BBTCA) is a Transport Canada Certified Aerodrome, located on the shores of downtown Toronto's waterfront at the foot of Bathurst Street. The Airport is served by three (3) runways; Runway 08-26, Runway 06-24 and Runway 15-33. Runway 08-26 is the primary runway and is the only runway capable of serving night-time operations.

In 2014, the Airport was served by two (2) scheduled passenger air carriers, Porter Airlines and Air Canada Airlines, along with several other general aviation, commercial, corporate and recreational operators. The Airport is also base to Ornge, who operates a small fleet of rotary-wing aircraft and fixed-wing aircraft providing air ambulance medical services within Ontario.

According to Statistics Canada publication TP577, in 2014 BBTCA had 116,125 aircraft movements including 6,371 helicopter movements.

1.2 BACKGROUND

Operation of BBTCA is governed by a Tripartite Agreement between the following signatories: PortsToronto (formally the Toronto Port Authority), the City of Toronto and Her Majesty the Queen in right of Canada represented by the Minister of Transport (i.e. Transport Canada). BBTCA is operated by PortsToronto.

In accordance with the Tripartite Agreement, PortsToronto is required to maintain certain restrictions with respect to the operation of aircraft at the Airport. These include the following:

- All flights into and out of the Airport shall operate between the hours of 06:45h and 23:00h, with the exception to medical evacuations and other emergency uses.
- No jet-powered aircraft are permitted to operate from the Airport with the exception of medical evacuations and other required emergency use, and during the period of the annual National Exhibition Airshow.
- Regulate the overall frequency of aircraft movements in order to contain the actual 28 NEF (Noise Exposure Forecast) contour within the boundary of the official 25 NEF contour for 1990 as shown on the 1990 Contour map dated 1978, attached to the Tripartite Agreement as Schedule F.

WSP Canada Inc., a Canadian engineering consultancy has been retained by Transport Canada to complete a Noise Study of the Billy Bishop Toronto City Airport to generate NEF contours based on actual aircraft movements during the 2014 calendar year.

1.3 PROJECT SCOPE

In accordance with the Request for Proposal dated July 14, 2015, the scope of this assignment is:

> *"To provide a Noise Exposure Contour study report for the calendar year 2014. The report must contain two contours maps; one with Helicopters and one without based on the 95-percentile level of aircraft movements".*

1.4 GUIDING PRINCIPLES

The following documents were used as guiding principles during the development of the NEF contours:

- TP1247 – Aviation Land Use Planning in the Vicinity of Airports.
- The 1983 Consolidated Tripartite Agreement excerpts as provided by Transport Canada.
- Transport Canada Noise Exposure Software (NEFcalc) ver.2.0.6.1.
- Canada Air Pilot and Canada Flight Supplement **(Appendix A**) effective during the study period.

2 METHODOLOGY

2.1 TAMS DATA

TAMS data (i.e. tower logs) is a detailed summary of all itinerant and local aircraft movements which operated from the Airport. This data is originally collected by NAV CANADA through the Air Traffic Control Tower (ATCT) and is subsequently sent to Statistics Canada for review.

1. Itinerant and local NAV CANADA aircraft movement statistics (TAMS) were obtained directly from Statistics Canada. Since Statistics Canada has been instructed to limit the distribution of certain "sensitive" aircraft movements, WSP obtained a second, complete set of Aircraft Movement Statistics directly through Transport Canada for the 2014 calendar year.
2. The following information is contained in the itinerant TAMS data:
   - **a.** Reporting Date
   - **b.** Air Carrier Code
   - **c.** Aircraft Type
   - **d.** Arrival or Departure
   - **e.** Runway Identifier
   - **f.** Origin / Destination Airport
   - **g.** IFR or VFR
3. The following information is contained in the local TAMS data:
   - **a.** Reporting Date
   - **b.** Type of Aircraft Movement
   - **c.** Count of Movement
4. The itinerant and local TAMS data were imported into a proprietary WSP Microsoft Access database and processed to obtain the airport traffic statistics and to organize the data such that it could be imported into Transport Canada's NEFcalc computer software.

2.2 KEY AIRPORT TRAFFIC STATISTICS

The following key airport traffic statistics were extracted from the TAMS data:

1. Aircraft Fleet Mix
2. Runway Utilization
3. Day/Night Distribution
4. Peak Planning Day Inputs

2.2.1 AIRCRAFT FLEET MIX

Aircraft fleet mix is obtained directly from the TAMS data and is used by the NEFcalc computer program to model aircraft noise. The NEFcalc computer program does not have a noise characteristics for all aircraft; therefore it uses equivalent 'substitutions' of one aircraft by another.

In the case of the latest NEFcalc software, one significant missing aircraft is the Bombardier Dash-8 Q400. Since this aircraft is not included in the software, it has been modelled as a Bombardier Dash 8-300. As this is the largest and most frequent aircraft utilizing the Airport, it is important that it is modelled as accurately as possible.

In order to validate that this substitution was appropriate, a review of Type Certificate Data Sheet for Noise as developed by Bombardier and published by the European Aviation Safety Agency was reviewed for both the Bombardier Dash 8-Q400 and Dash 8-300, as shown in **Appendix B**. This analysis determined that the EPNL Limit noise levels for Lateral, Flyover and Approach for the Dash 8-Q400 are substantially lower than those of the Dash 8-300. Although this demonstrates that the Dash 8-Q400 is an acceptable substitute, it also highlights the fact that the contours are much larger than they would be if the Dash 8-Q400 were properly modelled.

There is the ability to input 'custom' aircraft, in which performance characteristics and noise profile of the aircraft are populated into the program. Typically these 'custom' aircraft are inputted using the Federal Aviation Administration (FAA) Aviation Environmental Design Tool (AEDT) program which WSP has and is familiar with. Upon review of the latest software (FAA AEDT ver.2B), the Bombardier Dash 8-Q400 is not specifically modelled.

Therefore, since there is no officially authorized or approved 'custom' aircraft noise model for the Dash 8-Q400, it was determined that the Dash 8-300 would be an appropriate substitution. It is however recommended that Transport Canada generate or approve a 'custom' Dash 8-Q400 noise model such that the noise contours accurately reflect the actual noise environment.

In addition to the Bombardier Dash 8-Q400 aircraft movements, helicopter aircraft are also difficult to model within the latest NEFcalc computer software. Unlike the latest FAA INM ver 7.c, NEFcalc has no helicopter module and has no helicopters stored by default. Therefore, in order to accurately model the 4,845 helicopter movements, a custom helicopter model must be generated.

According to the Request for Proposal, helicopter noise values were said to be available from the FAA Advisory Circular No.36-1H, Appendix 10. Upon review of this document, the EPNL noise values for the helicopters are not available in a format that is compatible with the NEFcalc program. As a result, it is not possible to transfer the values contained therein into the NEFcalc program.

It was therefore proposed that a custom aircraft, as described above for the Bombardier Dash 8-Q400, would be utilized to generate the noise profiles for the helicopter activity. This custom aircraft was obtained by Transport Canada for use in the former NEFcalc ver.1.8 software and is of the Bell 212. The Bell 212 is one of the largest helicopters utilized at BBTCA and is larger than the Sikorsky S76 utilized by Ornge in 2014 which equals the majority of all helicopter activity.

Therefore, it was concluded that the custom Bell 212 data, as previously provided by Transport Canada, is appropriate for this analysis.

2.2.2 RUNWAY UTILIZATION

The runway utilization for itinerant aircraft movements are obtained directly from the TAMS data. It should be noted that there is no runway utilization provided for local aircraft movements. Therefore, the calculated itinerant runway utilization is used for local movements.

2.2.3 DAY / NIGHT DISTRIBUTION

According to the NEF model, night-time is defined as being between the hours of 22:00h and 07:00h. Night-time aircraft movements are weighted 16.67x an equivalent daytime aircraft movement to account for the increased annoyance of night-time flights. The day/night distribution is obtained directly from the TAMS data for both itinerant and local aircraft movements.

2.2.4 PEAK PLANNING DAY

According to Transport Canada, the Peak Planning Day is intended to equate to the number of aircraft movements (arrivals or departures) observed at the Airport during a typical busy day in the year. This is referred to as the busy day or the 95th percentile, where only 5% of the days are busier.

There are a number of different ways to calculate the Peak Planning Day, however in accordance with the Request for Proposal, the following method was used:

1. During the year the three (3) busiest months are isolated and of those months, the seven (7) busiest days are isolated, for a total of twenty-one (21) days.
2. The Peak Planning Day is then calculated as the average number of movements over these twenty-one (21) days, where:

   NP = (1/21) x (N1 + N2 + N3... + N21)
   NP = Peak Planning Day

Therefore, based on the above, the following summarizes the annual movement summary for both itinerant and local movements used to develop their respective Peak Planning Day:

Table 2-1 Peak Planning Day Analysis Summary

ITINERANT			LOCAL		
MONTH	DAY	MOVEMENTS	MONTH	DAY	MOVEMENTS
August	8	354	June	22	266
August	10	351	June	26	192
August	7	340	June	16	186
August	29	330	June	19	170
August	6	327	June	18	158
August	19	327	June	1	146
August	15	322	June	8	142
July	11	364	August	3	224
July	10	355	August	9	178
July	25	355	August	17	176
July	31	339	August	8	174
July	24	332	August	6	160
July	18	331	August	5	154

ITINERANT			LOCAL		
MONTH	DAY	MOVEMENTS	MONTH	DAY	MOVEMENTS
July	17	325	August	31	146
September	7	370	September	14	214
September	26	360	September	3	198
September	14	345	September	23	172
September	28	330	September	24	158
September	19	321	September	25	148
September	18	316	September	26	134
September	12	313	September	20	130
	Average	*338*		*Average*	*173*

Source: TAMS Data.

2.3 NEFCALC MODEL SETUP

The following information is inputted into the NEFcalc computer software and is necessary to generate the NEF contours. This information is based on the physical and operational characteristics of the Airport in accordance with published data specific to BBTCA.

1. Runways
2. Flight Paths

2.3.1 RUNWAYS

Runway data for BBTCA was obtained directly from the Canada Flight Supplement and Canada Air Pilot (effective November 13, 2014) and is as follows:

- Runway 08-26 3,988’ x 150’
- Runway 06-24 2,933’ x 150’
- Runway 15-33 2,979’ x 150’

Using an electronic AutoCAD file obtained from an actual airport survey by WSP, the real world threshold co-ordinates for each of the runway thresholds were determined and input into the model.

2.3.2 FLIGHT PATHS

All approach, departure and circuit flight paths, including those flown by helicopters, were modelled in accordance with the published procedures per the Canada Flight Supplement and Canada Air Pilot (effective November 13, 2014). The following summarizes those inputs:

- Approach Slopes

  Runway 08 3.5° (ILS/DME RWY 08)

  Runway 26 4.8° (ILS/DME RWY 26 – RCAP)

  Runway 06 3.0° (standard approach slope)

  Runway 24 3.0° (standard approach slope)

  Runway 15 3.0° (standard approach slope)

Runway 33 3.0° (standard approach slope)

→ Departure Procedures

Runway 08 Climb runway heading to 1.9 DME. Turn right heading 141°

Runway 15 Climb runway heading to 2000'. Turn right heading 201°

Runway 24 Climb runway heading to 2000'. Turn left heading 201°

Runway 26 Climb runway heading to 2000'. Turn left heading 201°

→ Circuit Procedures

Runway 08 Right hand circuit and final approach slope 3.9°.

Runway 26 Left hand circuit and final approach slope 4.8°.

Runway 06 Right hand circuit and final approach slope 3.0°.

Runway 24 Left hand circuit and final approach slope 3.0°.

Runway 15 Right hand circuit and final approach slope 3.0°.

Runway 33 Left hand circuit and final approach slope 3.0°.

2.4 NEFCALC INPUT DATA

Once the TAMS data were processed and the Peak Planning Day determined, two (2) export data sheets were generated which consolidate all 2014 aircraft movements into an equivalent peak planning day value. This therefore provides the noise environment of all flight operations during the entire year condensed into a single 'busy day'.

The following data elements are exported by the proprietary WSP Microsoft Access database such that they can be imported into NEFcalc 2.0.6.1:

1. Aircraft Code
2. Flight Path
3. NEF Stage Length
4. Summary of Day Movements
5. Summary of Night Movements

3 TRAFFIC STATISTICS

3.1 HISTORICAL ANNUAL TRAFFIC STATISTICS

The following details the current aircraft statistics for BBTCA:

Table 3-1 Historical Aircraft Movements

YEAR	ITINERANT	LOCAL	TOTAL	VARIATION
2014	88,473	24,652	116,125	1.5%

Source : Transport Canada TP577

Table 3-2 itinerant Movements by Type of Power Plant

YEAR	JET	TURBOPROP	PISTON	HELICOPTERS	TOTAL
2014	220	63,033	18,848	6,371	88,473

Source : Transport Canada TP577

As required by the Tripartite Agreement, when annual helicopter activity exceeds 4,000 movements, they shall be included within the NEF contour. Therefore with 6,371 movements in 2014 all helicopter activity was modelled within the study.

As discussed in Section 1.2, jet traffic is prohibited from operation from BBTCA except as required for medical transport or emergency purposes. However, this limited number of movements still form part of the overall noise environment for the Airport and are therefore modelled in the study.

3.2 TIME OF DAY DISTRIBUTION

As discussed in Section 2.2.3, night-time aircraft movements are weighted 16.67x an equivalent daytime aircraft movement. Therefore, accounting for the number of night-time movements is critical to generating a noise model that correctly reflects the noise environment at the Airport.

The following summarizes the day/night distribution of itinerant and local traffic based on the statistics extrapolated from the TAMS data:

Table 3-3 Aircraft Movements by Time of Day

TIME OF DAY	ITINERANT	LOCAL	TOTAL
Day (07:00h-22:00h)	73.5%	23.4%	96.9%
Night (22:00h-07:00h)	2.7%	0.4%	3.1%
Total	76.1%	23.9%	100%

Source : Statistics Canada TAMS Data

3.3 RUNWAY DISTRIBUTION

The level of activity on each runway will impact the size and shape of the NEF contours, where runways with greater utilization will have larger contours associated with them. Runways with a higher percentage of departure traffic over arrival traffic will also result in larger NEF contours.

The following summarizes the runway distribution based on the statistics extrapolated from the TAMS data:

Table 3-4 Itinerant Runway Distribution

RUNWAY	DAY	NIGHT	TOTAL
Runway 08	30.5%	1.2%	31.7%
Runway 26	59.6%	2.3%	61.9%
Runway 06	0.1%	0.0%	0.1%
Runway 24	0.8%	0.0%	0.8%
Runway 15	0.1%	0.0%	0.1%
Runway 33	0.7%	0.0%	0.1%
Total	96.5%	3.5%	95.3%

RUNWAY 08-26	DEPARTURE	ARRIVAL	TOTAL
Runway 08	15.7%	16.0%	31.7%
Runway 26	30.5%	31.4%	61.9%

Source : Statistics Canada TAMS Data
Notes: Does not equal 100% due to missed approaches and overflights.
Missed approaches (99) were re distributed amongst existing runways as per relative utilization.
Overflights (88) do not contribute to an NEF model.

3.4 PEAK PLANNING DAY

As detailed in Section 2.2.4, the following summarizes the Peak Planning Day:

Table 3-5 Peak Planning Day

MOVEMENT	ITINERANT FIXED WING	ITINERANT ROTARY WING	LOCAL	TOTAL
Annual	82,101	6,371	24,652	116,125
Peak Planning Day	314	24	173	511

Source : Transport Canada TP577 and WSP Analysis

4 NOISE STUDY ASSESSMENT AND STUDY

4.1 CONTOURS MODELLED

In acc1ordance with the Request for Proposal, two (2) noise contours were modelled based on the input data detailed in previous sections. A single 2014 noise contour was modelled for all actual 2014 traffic and a second model was generated where helicopter traffic was removed. These two (2) NEF contours are enclosed as **Appendix C and D**, respectively.

As indicated in TP1247, the NEF contours are depicted on a 1:20,000 scaled drawing and show the 28, 30 and 35 NEF contours. Although recommended per TP1247, the 40 NEF was omitted from the figures as it remained within the runway system and does not impact noise sensitive land uses.

4.2 2014 ACTUAL

As shown in **Appendix C**, the 28 NEF generated from actual 2014 aircraft movement statistics remains within the 1990 Official 25 NEF.

4.3 2014 ACTUAL – NO HELICOPTER TRAFFIC

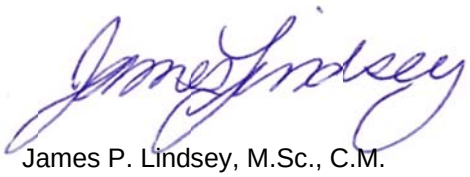
The removal of the twenty-four (24) Planning Day helicopter movements, results in a further reduction of the size of the 28 NEF contours, which already remain entirely within the 1990 Official 25 NEF contour.

4.4 SUMMARY

Based on the forgoing analysis undertaken by WSP, it was determined that the 28 NEF contours prepared for the Billy Bishop Toronto City Airport using actual aircraft movement statistics for the 2014 calendar year comply with the requirements per the Tripartite Agreement. In all areas the 28 NEF contours remains entirely within the 1990 Official 25 NEF contours, attached to the Tripartite Agreement as Schedule F.

All of which is respectfully submitted,

WSP Canada Inc.



James P. Lindsey, M.Sc., C.M.
Director, Aviation

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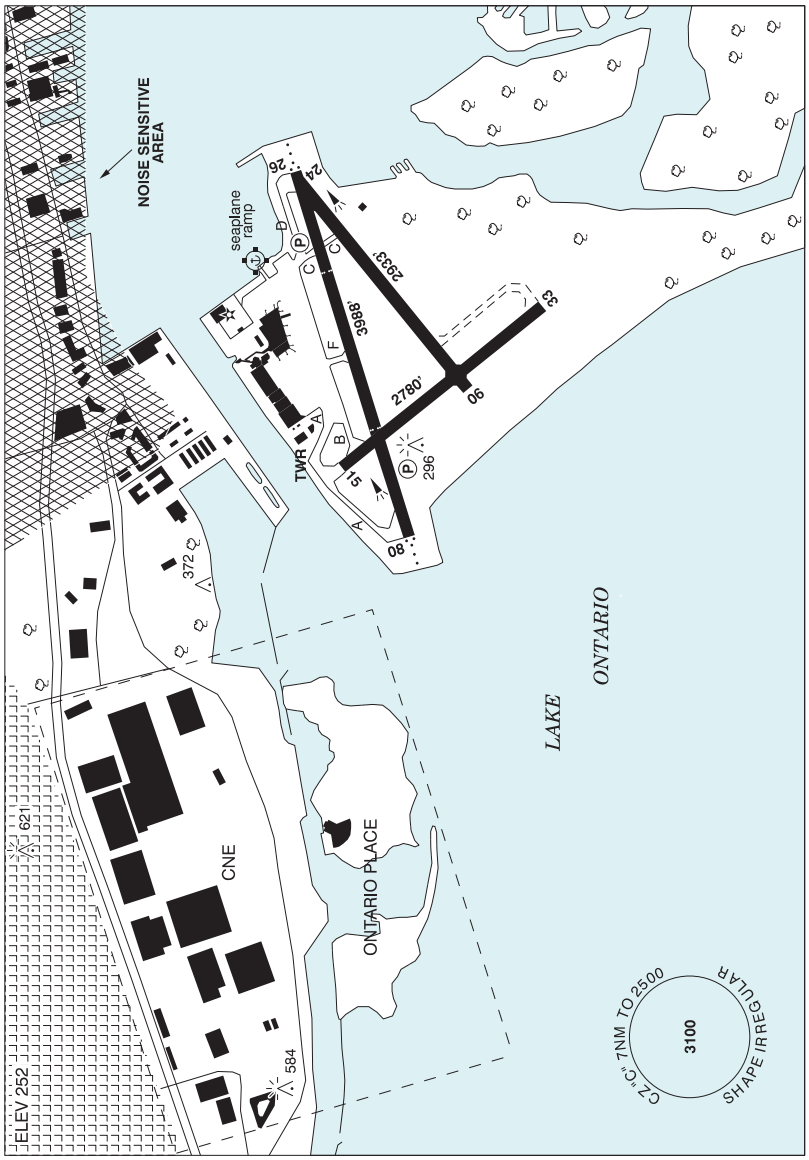
Appendix A

CANADA FLIGHT SUPPLEMENT AND CANADA AIR PILOT

TORONTO / BILLY BISHOP TORONTO CITY AIRPORT ON — CYTZ



REF	N43 37 39 W79 23 46 Adj S 11°W UTC-5(4) Elev 252´ VTA A5000 LO6 T2 CAP RCAP
OPR	Toronto Port Authority 416-203-6942 Cert Ldg fees
PF	A-1 B-2,3,6 C-4,5

TORONTO / BILLY BISHOP TORONTO CITY AIRPORT ON (Cont'd) CYTZ

CUST	AOE/90 888-226-7277 13-05Z‡
FLT PLN	NOTAM FILE CYTZ Pilots to open/ close VFR flt plan with London rdo 123.15 or by phone.
FIC	London 866-WXBRIEF (Toll free within Canada) or 866-541-4104 (Toll free within Canada & USA)
ACC	Toronto 905-676-4590/4591/4592 or 888-217-1241
WX	METAR AUTO H24 (see COMM). WxCam TAF H24, issue times: 02, 08, 14, 20Z.
DUAT	Porter FBO
SERVICES	1145-0400Z‡ dly When ferry not running no access to aprt. Hrs of ferry operation are 1030-05Z‡.
FUEL	100LL, JA-1
OIL	All
S	1,3
ARFF	6 1145-0400Z‡ O/T call out chg 2 hrs PN
PVT ADV	Esso Aviation 416-361-1100 123.2 12-23Z‡; Porter FBO 416-203-2424 123.35 1130-0345Z‡; Esso (Toronto City Aviation) 416-361-1100 12-23Z‡ Opr Seaplane dock/ramp
RWY DATA	Rwy 08(082°)/26(262°) 3988x150 asphalt Rwy 06(061°)/24(241°) 2933x150 asphalt Rwy 15(151°)/33(331°) 2780x150 asphalt
RWY CERT	Rwy 08 RVR 1200(1/4sm)/Rwy26 RVR 1200(1/4sm)
TWY	Twy B and Twy C - Discretionary oversteering required for acft with wingspan 90ft (27m) (DH8-300) or greater.
RCR	Opr 1145-0345Z‡ CRFI/RSC avbl ltd hrs. PLR/PCN
LIGHTING	08-AS(TE HI) P1 3.9°, 26-AZ(TE HI) AP 4.8° MEHT 63´ See CAUTION PAPI P1 apch Rwy 08 and APAPI apch Rwy 26. Rwys 08 & 26 - three white inset pre-thld centerline lgts. Two pairs of inset white lgts 1099´ upwind of each thld mark end of TDZ. Yellow rwy edge lgts for final 1362´ Rwy 26 and final 1289´ Rwy 08.
COMM	
ATIS	133.6 1130-0400Z‡ dly
GND	121.7 1130-0400Z‡ dly
TWR	City 118.2 119.2 (V) 1130-0400Z‡ dly (emerg only 416-973-9240)
ATF	tfc 118.2 0400-1130Z‡ dly within CZ 7NM SHAPE IRREGULAR 2500 ASL
ARR	Toronto 133.4
DEP	Toronto 133.4
AWOS	133.6 0400-1130Z‡
NAV	
NDB	GIBRALTAR POINT TZ 257 (L) N43 36 46 W79 23 08
DME	TORONTO CITY ITZ 110.15 Ch 38(Y) N43 37 38 W79 23 58 (296') ITZ DME unmonitored when twr clsd. DME not usable within 1.0 DME.
ILS	ITZ 110.15 (Rwy 08) Ch 38(Y) RVR. ITZ ILS unmonitored when twr clsd. ICR 110.15 (Rwy 26) RVR. ICR ILS unmonitored when twr clsd. LOC reliable only within 10° either side of centerline.

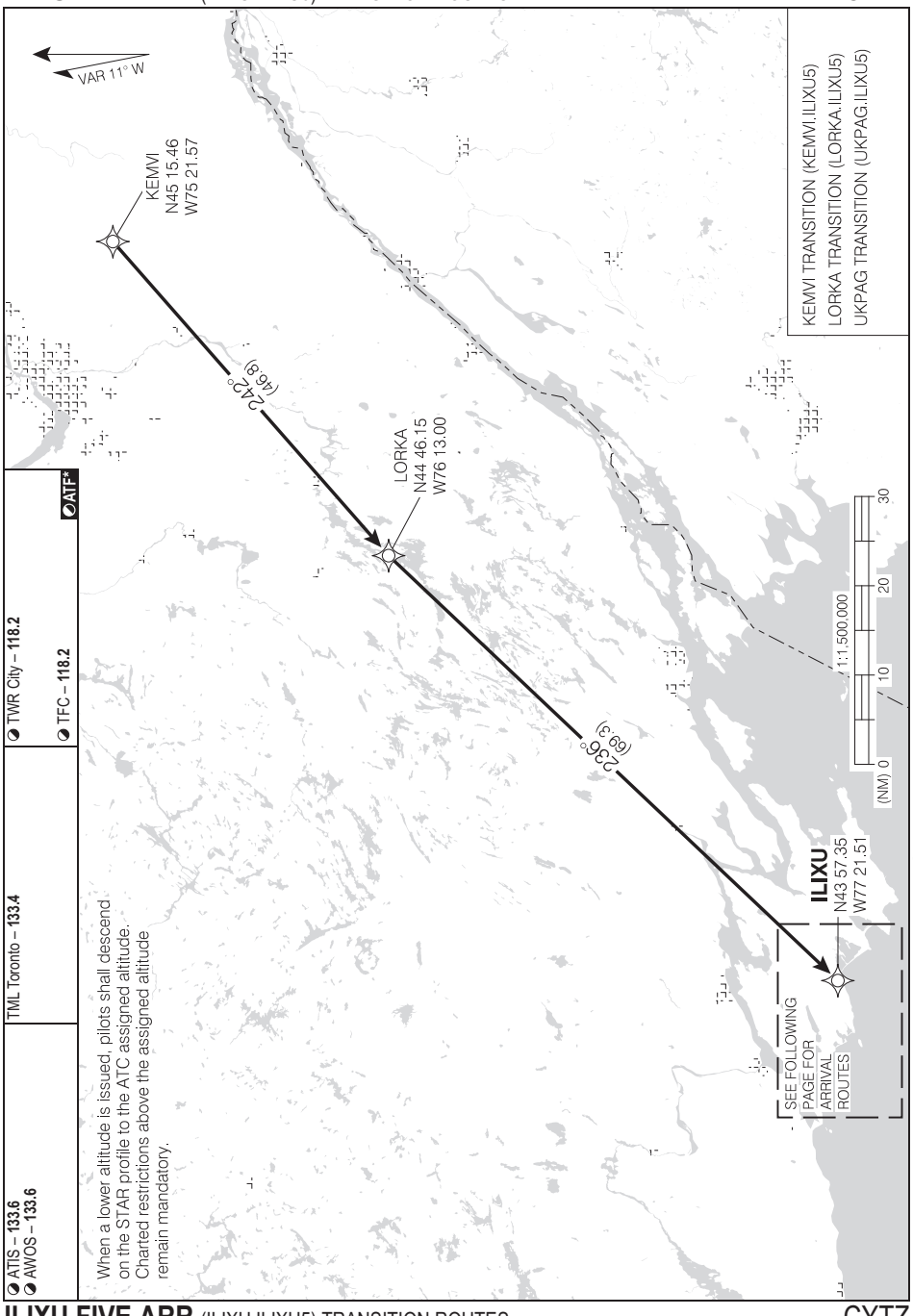
TORONTO / BILLY BISHOP TORONTO CITY AIRPORT ON (Cont'd) CYTZ

PRO	No arr/dep btwn 0400-1145Z‡ dly exc MEDEVAC & emerg. Rgt hand circuits Rwys 06, 08 & 15 (CAR 602.96). Rotary wing acft are to conform to established circuit pattern, unless auth by ATC. All pilots are rqrd to check with the Aprt Duty Mgr (ADM) prior to conducting any engine maint run-ups. All pilots are encouraged to minimize the use of "reverse thrust" upon ldg, as long as flt safety is not jeopardised in any way.
NOISE ABATEMENT	All jet acft (exc MEDEVAC flts) and certain types of propeller acft are proh fr utilizing the aprt. Pilots should check with aprt ops prior to arr. Pilots are requested to maintain 2000 ASL or above over Metropolitan Toronto Zoo (N43 49 05 W79 11 15). Avoid overflight of noise sensitive areas, see Toronto/Billy Bishop Toronto City Airport VTPC for east VFR routing.
CAUTION	All arr/dep acft to avoid flt over CNE/Ontario Place. For details see Toronto/Billy Bishop Toronto City Airport VTPC and Toronto/Billy Bishop Toronto City Airport sketch. Frequent banner towing activity over CNE in fixed pattern 1500 ASL and below. Vessels up to 120´ (366 ASL) in vic of final apch to all rwys. PAPI P1 apch slope Rwy 08 will ensure clearance over tall vessels. DME/glidepath antenna 296 ASL (45 AGL) at A/D, see sketch. APAPI Rwy 26 apch slope 4.8°. APAPI apch slope Rwy 26 will ensure clearance over vessels and chimney (N43 38 45 W79 19 59), 954 ASL (700 AGL) 2.6NM fr Thld 26. Secondary ERS subject to availability of ferry ops. Flagpole 372 ASL (121 AGL) located 0.3NM N of thld Rwy 15 & adj W of extended rwy centreline. Wind turbine aprx 1NM W of aprt at CNE 584 ASL (323 AGL) N43 37 52 W79 25 29. Extv bird activity on A/D. Seapl ramp rstd to acft with max wt of 4000 lbs.

STAR (RNAV) TORONTO/BILLY BISHOP TORONTO CITY AIRPORT, ON

ILIXU FIVE ARR (ILIXU.ILIXU5) TRANSITION ROUTES

CYTZ



ILIXU FIVE ARR (ILIXU.ILIXU5) TRANSITION ROUTES CYTZ

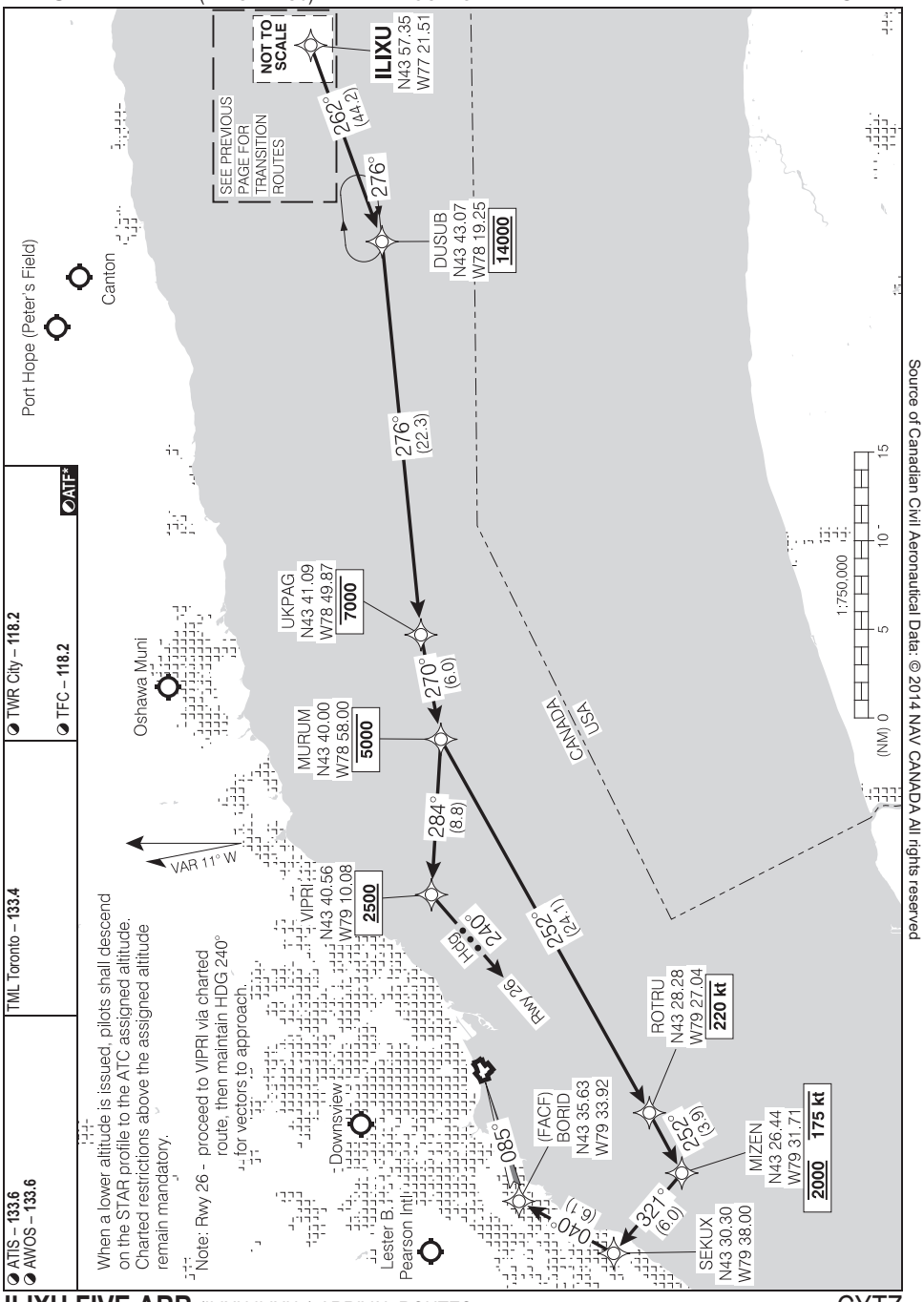
EFF 24 JUL 14

STAR (RNAV)

TORONTO/BILLY BISHOP TORONTO CITY AIRPORT, ON

ILIXU FIVE ARR (ILIXU.ILIXU5) ARRIVAL ROUTES

CYTZ



ILIXU FIVE ARR (ILIXU.ILIXU5) ARRIVAL ROUTES

CYTZ

EFF 24 JUL 14

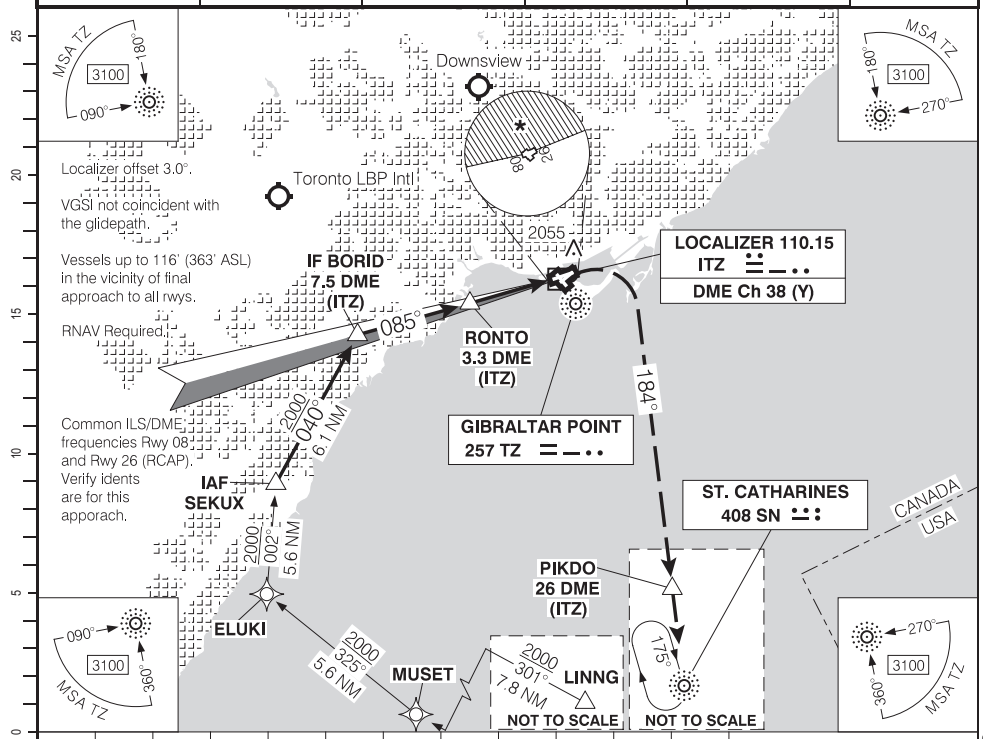
TORONTO/BILLY BISHOP TORONTO CITY AIRPORT, ON

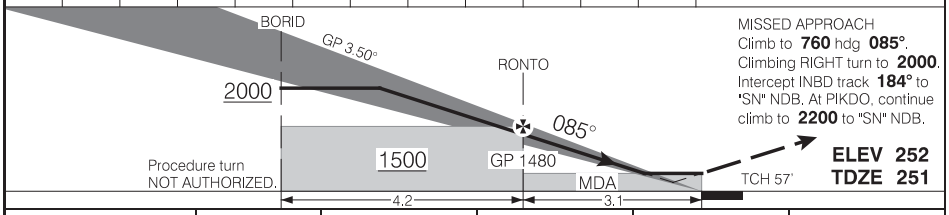
ILS RWY 08

433739N 0792346W VAR 11°W

CYTZ

ATIS – **133.6** AWOS – **133.6**	TML Toronto – **133.4**	TWR City – **118.2** TFC – **118.2** ATF*	GND – **121.7**	AS P1 3.9°
SAFE ALT 100 NM **4900**	LOC ITZ **110.15**	APCH CRS **085°**	GP RONTO **1480**	LDA **3988**





CATEGORY	A	B	C	D
ILS/DME	**562**	(311)	1 RVR 50	NOT AUTHORIZED
LOC/DME	**620**	(369)	1¼	NOT AUTHORIZED
CIRCLING	* **760** (508) 1½		* **760** (508) 2	NOT AUTHORIZED

RONTO to MAP 3.1 NM

Knots	ft/min	Min:Sec
70		**2:39**
90		**2:04**
110		**1:41**
130		**1:26**
150		**1:14**

ILS RWY 08

CYTZ

EFF 24 JUL 14

Canada Air Pilot
Effective 0901Z 13 NOV 2014 to 0901Z 8 JAN 2015

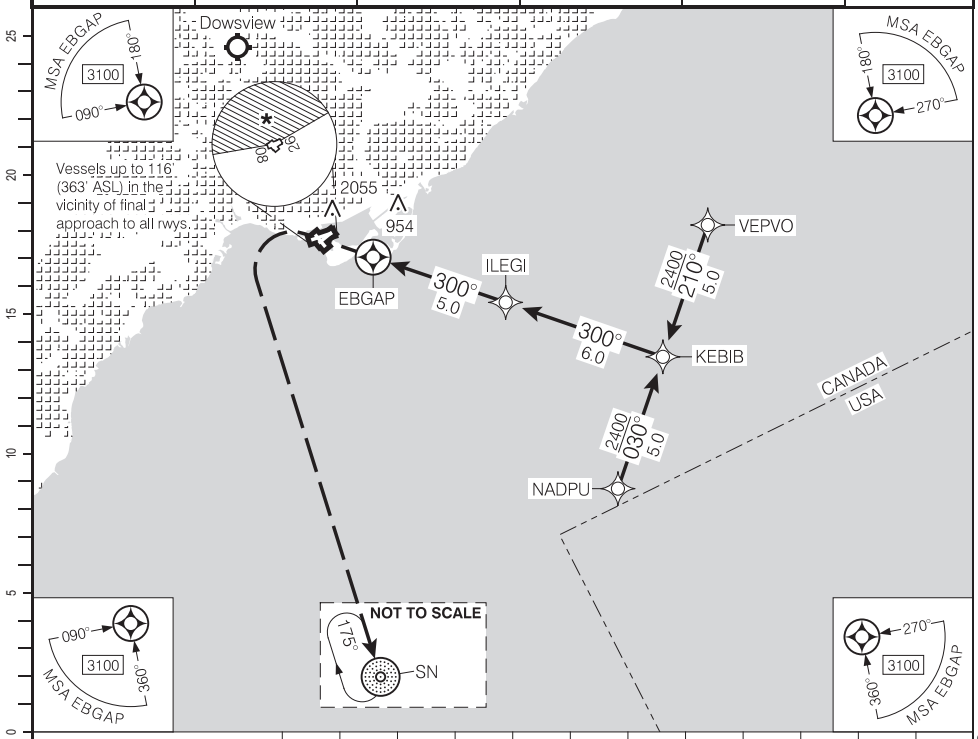
RNAV (GNSS) A

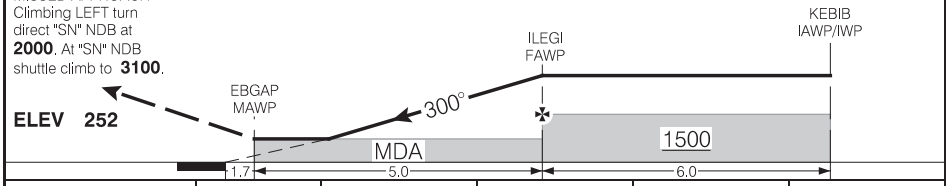
TORONTO/BILLY BISHOP TORONTO CITY AIRPORT, ON

433739N 0792346W VAR 11°W

CYTZ

ATIS – **133.6** AWOS – **133.6**	TML Toronto – **133.4**	TWR City – **118.2** TFC – **118.2** ATF*	GND – **121.7**	LIGHTING: REFER TO AD CHART
SAFE ALT 100 NM **4900**	RNAV	APCH CRS **300°**	MIN ALT ILEGI **1500**	LDA REFER TO AD CHART





CATEGORY	A	B	C	D
CIRCLING	* **760**	(508)	2	NOT AUTHORIZED

Knots	ft/min	Min:Sec
70		
90		
110		
130		
150		

RNAV (GNSS) A

CYTZ

EFF 24 JUL 14

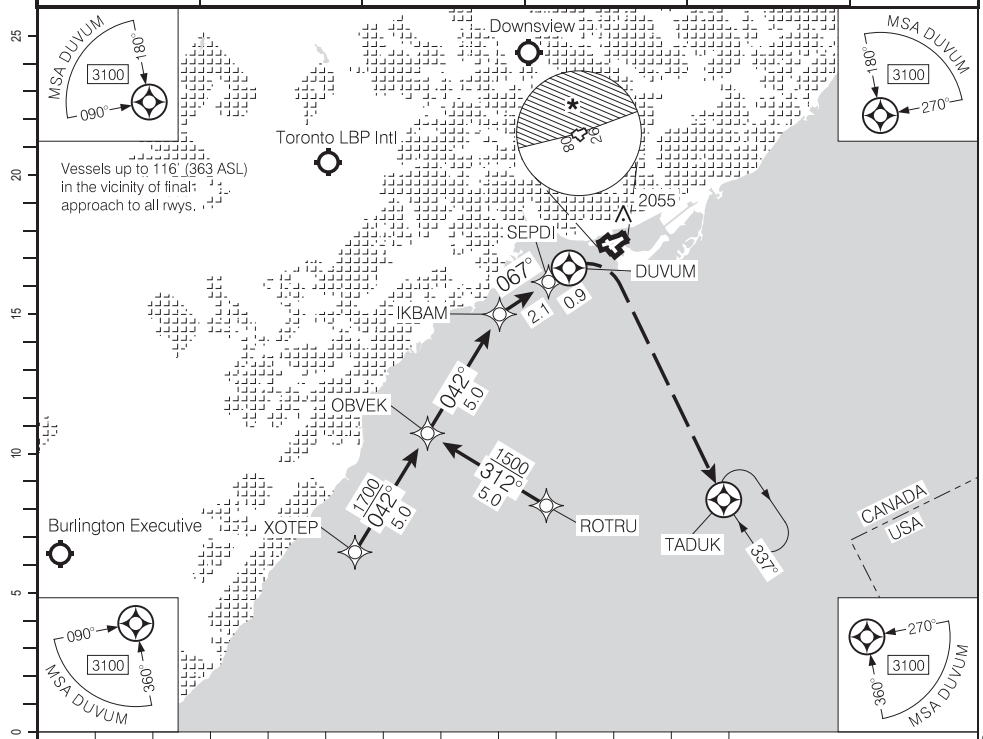
RNAV (GNSS) C

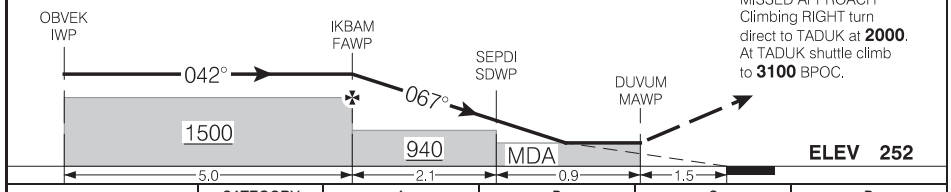
TORONTO/BILLY BISHOP TORONTO CITY AIRPORT, ON

433739N 0792346W VAR 11°W

CYTZ

ATIS – **133.6** AWOS – **133.6**	TML Toronto – **133.4**	TWR City – **118.2** TFC – **118.2** ATF*	GND – **121.7**	LIGHTING: REFER TO AD CHART
SAFE ALT 100 NM **4900**	RNAV	APCH CRS **067°**	MIN ALT IKBAM **1500**	LDA REFER TO AD CHART





CATEGORY	A	B	C	D
CIRCLING	* **760** (508)	1¾	NOT AUTHORIZED	

Knots	ft/min	Min:Sec
70		
90		
110		
130		
150		

RNAV (GNSS) C

CYTZ

EFF 24 JUL 14

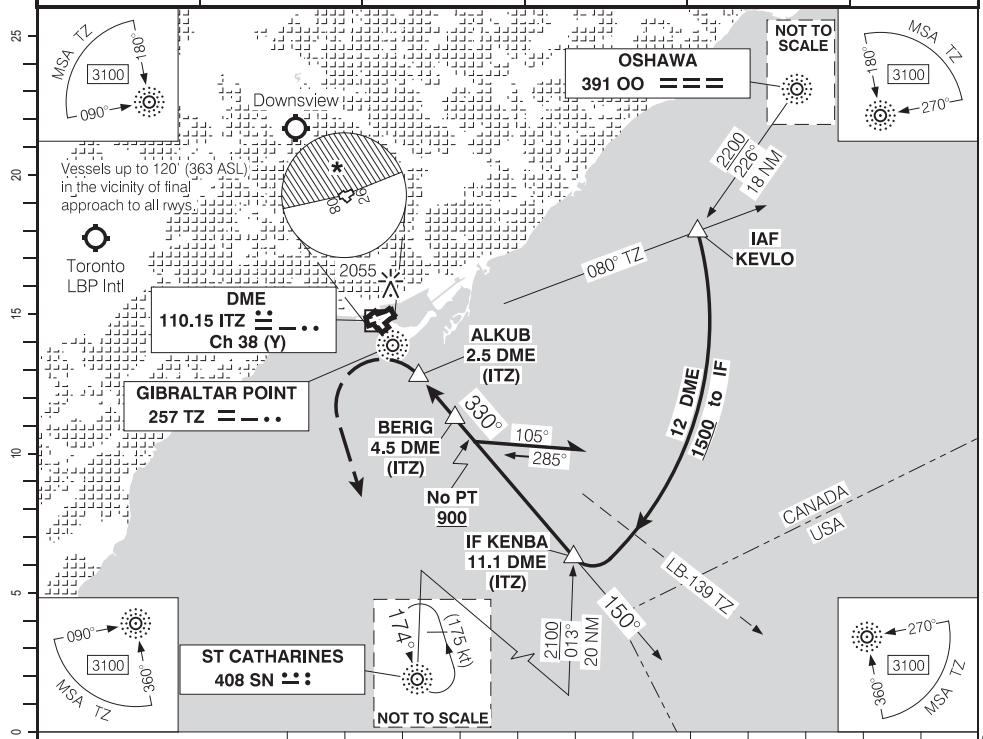
TORONTO/BILLY BISHOP TORONTO CITY AIRPORT, ON

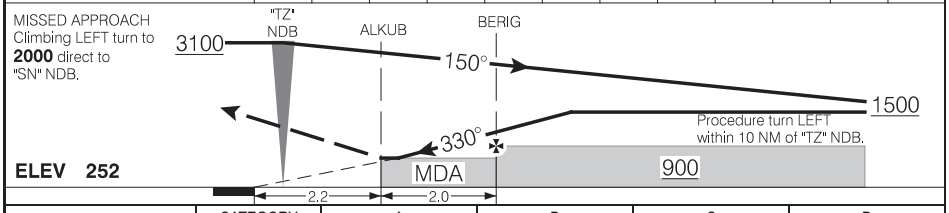
NDB/DME B

433739N 0792346W VAR 11°W

CYTZ

ATIS – **133.6** AWOS – **133.6**	TML Toronto – **133.4**	TWR City – **118.2** TFC – **118.2** ATF*	GND – **121.7**	LIGHTING: REFER TO AD CHART
SAFE ALT 100 NM **4900**	NDB TZ **257**	APCH CRS **330°**	MIN ALT BERIG **900**	LDA REFER TO AD CHART





CATEGORY	A	B	C	D
CIRCLING	* **760**	(508)	2¾	NOT AUTHORIZED

Knots	ft/min	Min:Sec
70		
90		
110		
130		
150		

NDB/DME B CYTZ

EFF 13 NOV 14

Departure Route Description

Unless otherwise assigned by ATC:

All rwys: Maintain **2000**.

Rwy 08: Requires a minimum climb gradient of **360** ft/NM to **1200**. Depart rwy 08, climb hdg **082°** to 1.9 DME (ITZ). Climbing RIGHT turn hdg **141°** or as assigned. Expect radar vectors to TESUK (or as assigned) then proceed via depicted route.

Rwy 15: Depart rwy 15, climbing RIGHT turn hdg **201°** or as assigned. Expect radar vectors to TESUK (or as assigned) then proceed via depicted route.

Rwy 24: Depart rwy 24, climbing LEFT turn hdg **201°** or as assigned. Expect radar vectors to TESUK (or as assigned) then proceed via depicted route.

Rwy 26: Depart rwy 26, climbing LEFT turn hdg **201°** or as assigned. Expect radar vectors to TESUK (or as assigned) then proceed via depicted route.

DEPARTURE CLIMB RATE V/V (FPM)

GROUND SPEED	90	120	140	160	180	200	250	300
360 FT/NM	540	720	840	960	1080	1200	1500	1800

MIVOK TRANSITION: **(BOMET4.MIVOK)**
EPSAT TRANSITION: **(BOMET4.EPSAT)**
MIGLO TRANSITION: **(BOMET4.MIGLO)**
OLABA TRANSITION: **(BOMET4.OLABA)**

Communication Failure

On recognition of failure 5 minutes or less after take-off and in IFR weather conditions proceed as follows:

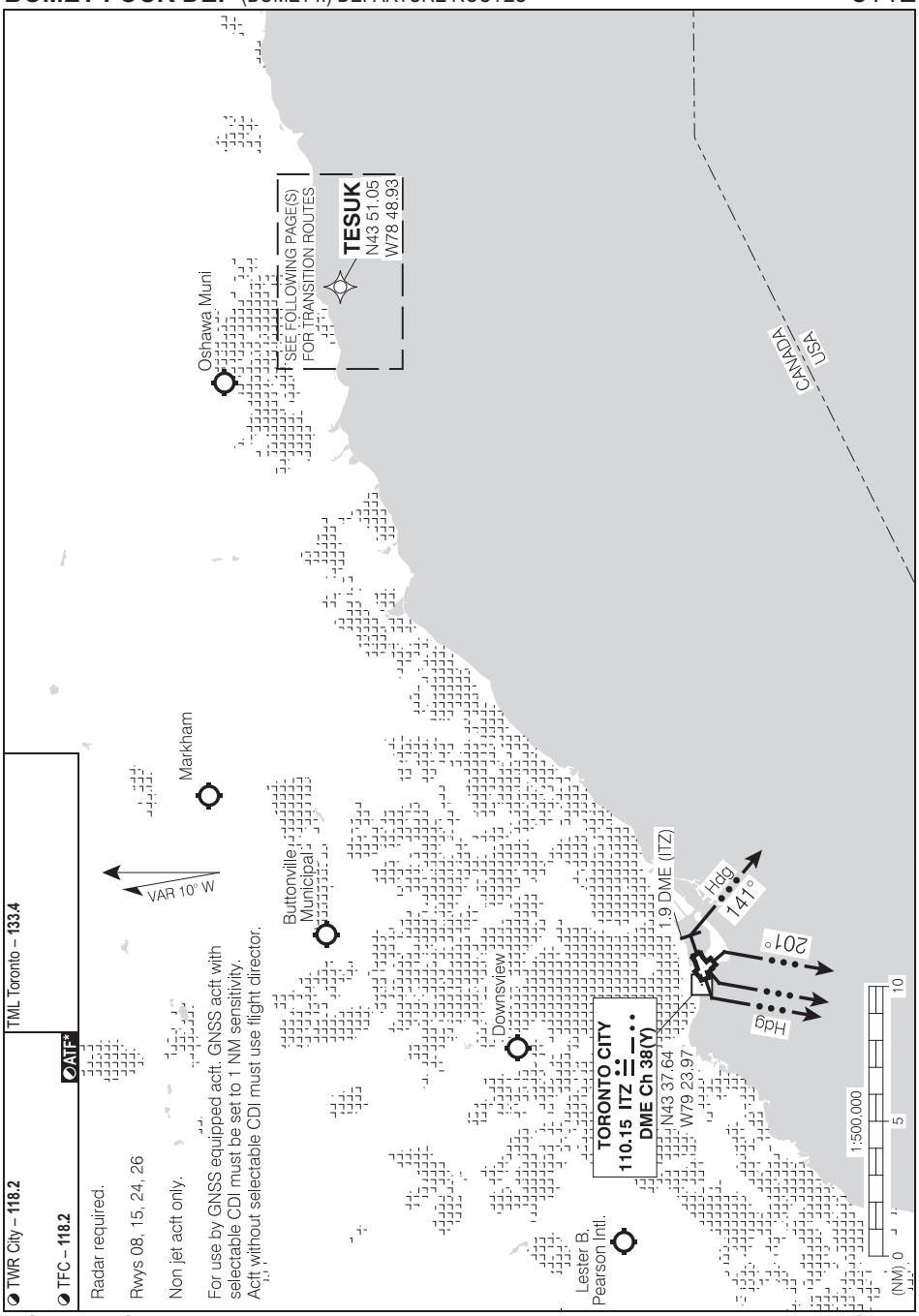
1. Select transponder code 7600;
2. Climb to **3100** on assigned heading;
3. Proceed on course and maintain **4000** or last assigned altitude whichever is higher, then;
4. Climb to flight planned altitude 5 minutes after recognition of the communication failure.

SID (RNAV)

TORONTO/BILLY BISHOP TORONTO CITY AIRPORT, ON

BOMET FOUR DEP (BOMET4.) DEPARTURE ROUTES

CYTZ



BOMET FOUR DEP (BOMET4.) DEPARTURE ROUTES

CYTZ

EFF 13 NOV 14

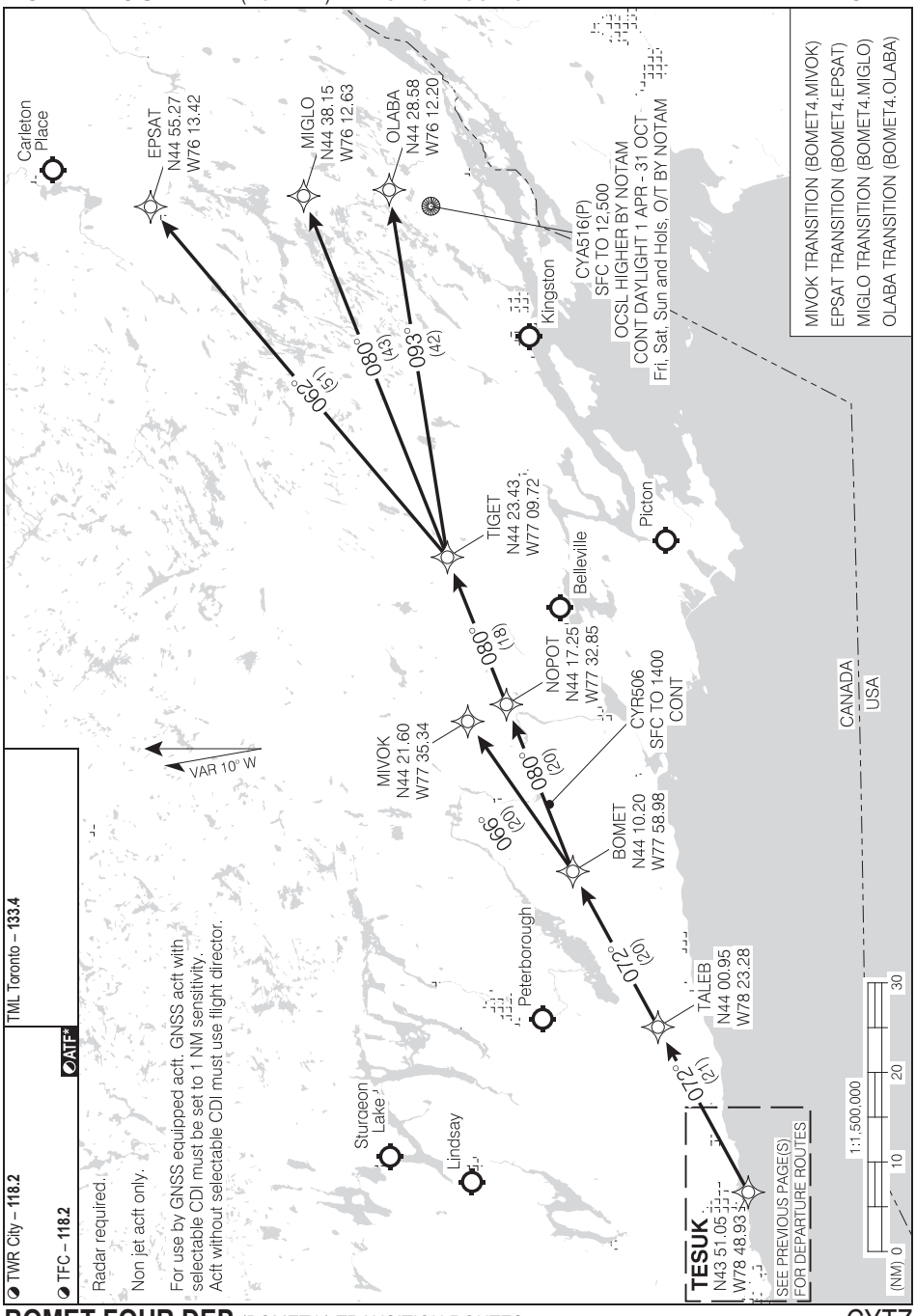
CYTZ-SID-1B

SID (RNAV)

TORONTO/BILLY BISHOP TORONTO CITY AIRPORT, ON

BOMET FOUR DEP (BOMET4.) TRANSITION ROUTES

CYTZ



BOMET FOUR DEP (BOMET4.) TRANSITION ROUTES

EFF 13 NOV 14

CYTZ

CYTZ-SID-1C

Departure Route Description

Unless otherwise assigned by ATC:

All rwys: Maintain **2000**.

Rwy 08: Requires a minimum climb gradient of **360** ft/NM to **1200**. Depart rwy 08, climb hdg **082°** to 1.9 DME (ITZ). Climbing RIGHT turn hdg **141°** or as assigned. Expect radar vectors to DUSOM (or as assigned) then proceed via depicted route.

Rwy 15: Depart rwy 15, climbing RIGHT turn hdg **201°** or as assigned. Expect radar vectors to DUSOM (or as assigned) then proceed via depicted route.

Rwy 24: Depart rwy 24, climbing LEFT turn hdg **201°** or as assigned. Expect radar vectors to DUSOM (or as assigned) then proceed via depicted route.

Rwy 26: Depart rwy 26, climbing LEFT turn hdg **201°** or as assigned. Expect radar vectors to DUSOM (or as assigned) then proceed via depicted route.

DEPARTURE CLIMB RATE V/V (FPM)

GROUND SPEED	90	120	140	160	180	200	250	300
360 FT/NM	540	720	840	960	1080	1200	1500	1800

PHILIPSBURG TRANSITION: (DUSOM1.PSB)

Communication Failure

On recognition of failure 5 minutes or less after take-off and in IFR weather conditions proceed as follows:

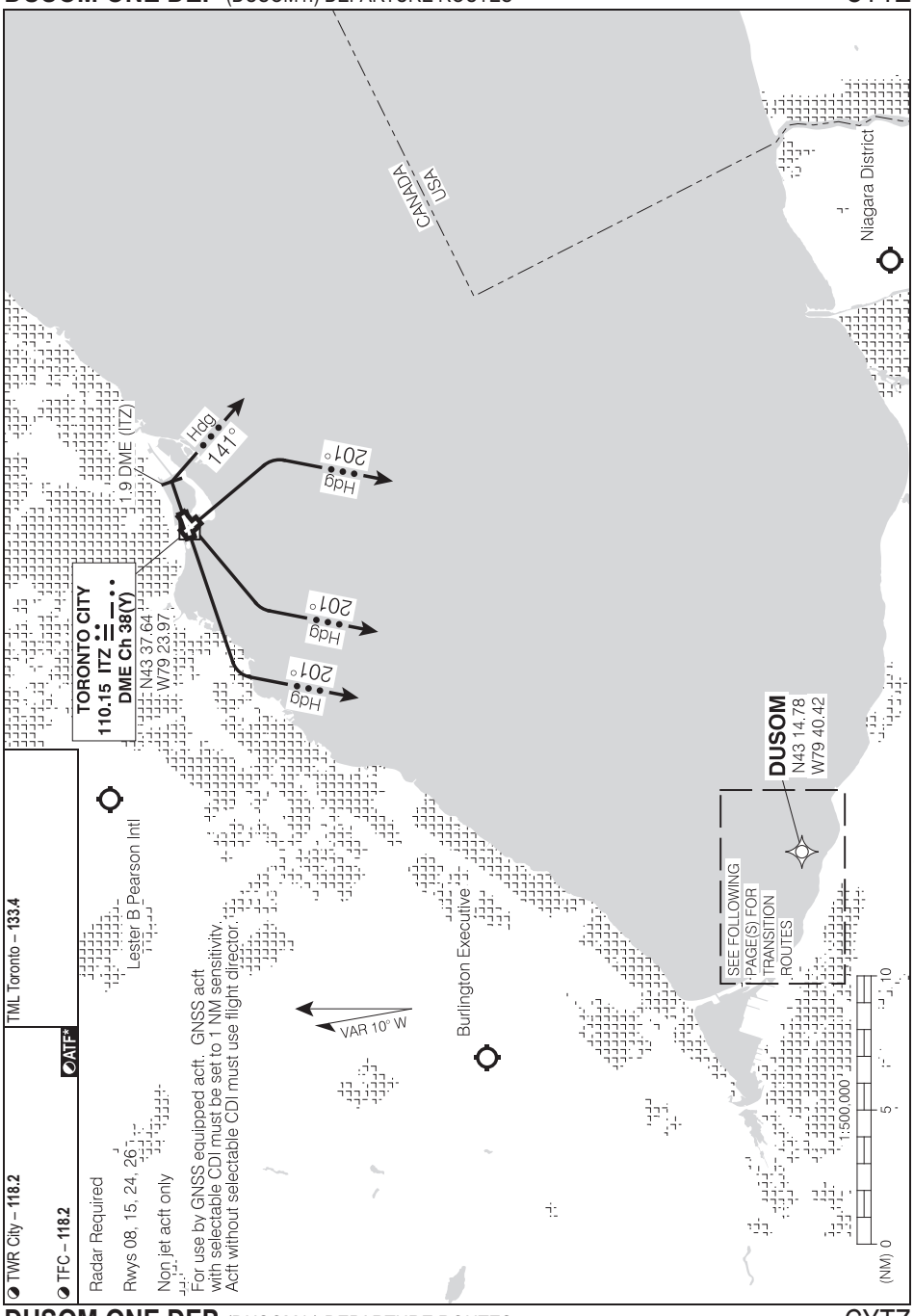
1. Select transponder code 7600;
2. Climb to **3100** on assigned heading;
3. Proceed on course and maintain **4000** or last assigned altitude whichever is higher, then;
4. Climb to flight planned altitude 5 minutes after recognition of the communication failure.

SID (RNAV)

TORONTO/BILLY BISHOP TORONTO CITY AIRPORT, ON

DUSOM ONE DEP (DUSOM1.) DEPARTURE ROUTES

CYTZ



DUSOM ONE DEP (DUSOM1.) DEPARTURE ROUTES

CYTZ

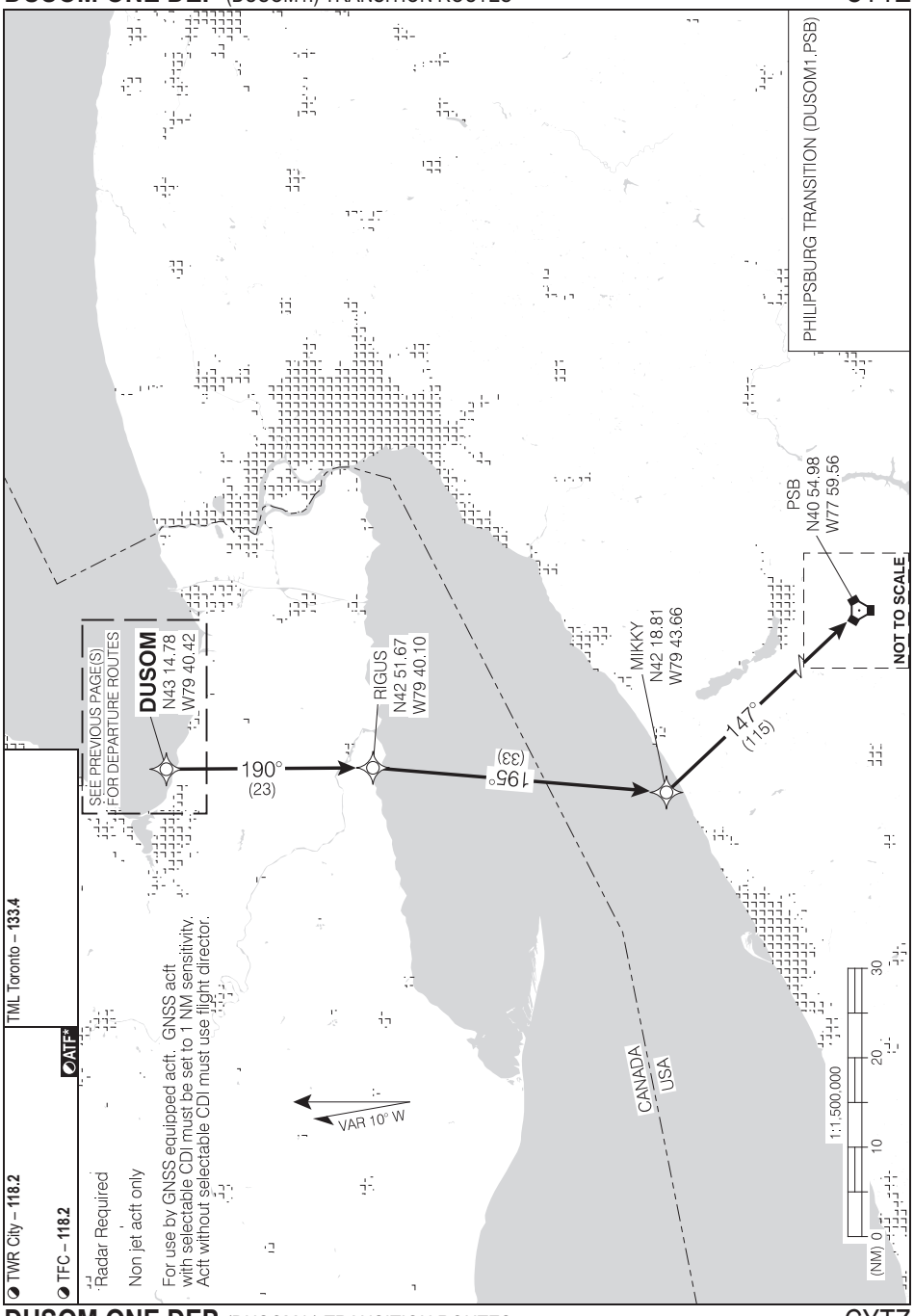
EFF 13 NOV 14

SID (RNAV)

TORONTO/BILLY BISHOP TORONTO CITY AIRPORT, ON

DUSOM ONE DEP (DUSOM1.) TRANSITION ROUTES

CYTZ



DUSOM ONE DEP (DUSOM1.) TRANSITION ROUTES

CYTZ

EFF 13 NOV 14

CYTZ-SID-2C

Departure Route Description

Rwy 08: Requires a minimum climb gradient of **360** ft/NM to **1200**. Climb hdg **082°** to 1.9 DME (Ch 38 (Y)). Then climbing RIGHT turn to **2000** hdg **141°** for vectors.

Rwy 15: Climbing RIGHT turn to **2000** hdg **201°** for vectors.

Rwy 24: Climbing LEFT turn to **2000** hdg **201°** for vectors.

Rwy 26: Climbing LEFT turn to **2000** hdg **201°** for vectors.

DEPARTURE CLIMB RATE V/V (FPM)

GROUND SPEED	90	120	140	160	180	200	250	300
360 FT/NM	540	720	840	960	1080	1200	1500	1800

Communication Failure

On recognition of communication failure 5 minutes or less after take-off and in IMC, proceed as follows:

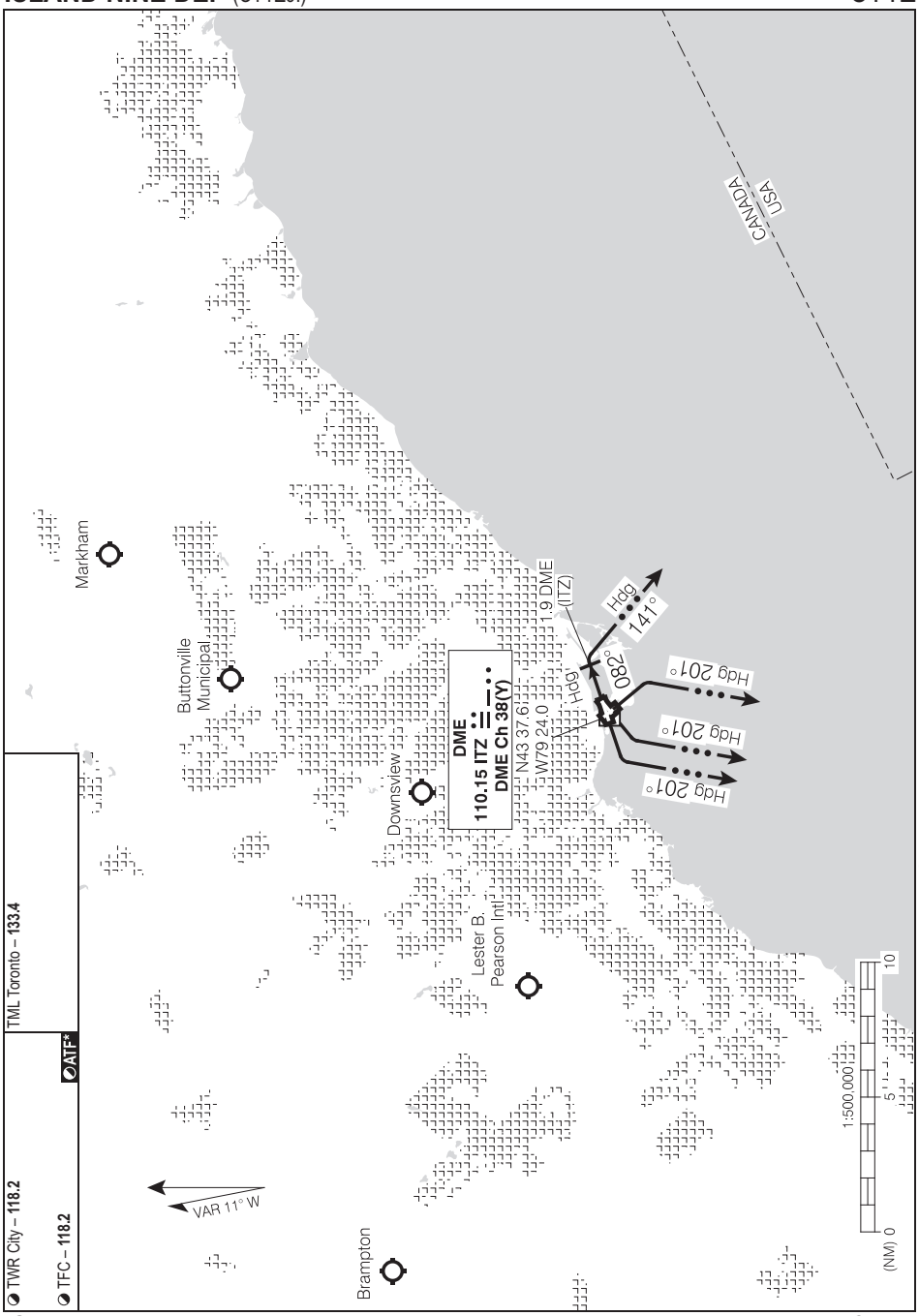
1. Select transponder code 7600;
2. Climb to **3100** ASL on assigned heading;
3. Proceed on course and maintain **4000** ASL or last assigned altitude whichever is higher;
4. Climb to flight planned altitude 5 minutes after recognition of the communication failure.

SID (VECTOR)

ISLAND NINE DEP (CYTZ9.)

TORONTO/BILLY BISHOP TORONTO CITY AIRPORT, ON

CYTZ



ISLAND NINE DEP (CYTZ9.)

CYTZ

EFF 13 NOV 14

Departure Route Description

Unless otherwise assigned by ATC:

All rwys: Maintain **2000**.

Rwy 08: Requires a minimum climb gradient of **360** ft/NM to **1200**. Depart rwy 08, climb hdg **082°** to 1.9 DME (ITZ). Climbing RIGHT turn hdg **141°** or as assigned. Expect radar vectors to RIKEM (or as assigned) then proceed via depicted route.

Rwy 15: Depart rwy 15, climbing RIGHT turn hdg **201°** or as assigned. Expect radar vectors to RIKEM (or as assigned) then proceed via depicted route.

Rwy 24: Depart rwy 24, climbing LEFT turn hdg **201°** or as assigned. Expect radar vectors to RIKEM (or as assigned) then proceed via depicted route.

Rwy 26: Depart rwy 26, climbing LEFT turn hdg **201°** or as assigned. Expect radar vectors to RIKEM (or as assigned) then proceed via depicted route.

DEPARTURE CLIMB RATE V/V (FPM)

GROUND SPEED	90	120	140	160	180	200	250	300
360 FT/NM	540	720	840	960	1080	1200	1500	1800

BMPAH TRANSITION: **(MAVAN1.BMPAH)**
WOZEE TRANSITION: **(MAVAN1.WOZEE)**

Communication Failure

On recognition of failure 5 minutes or less after take-off and in IFR weather conditions proceed as follows:

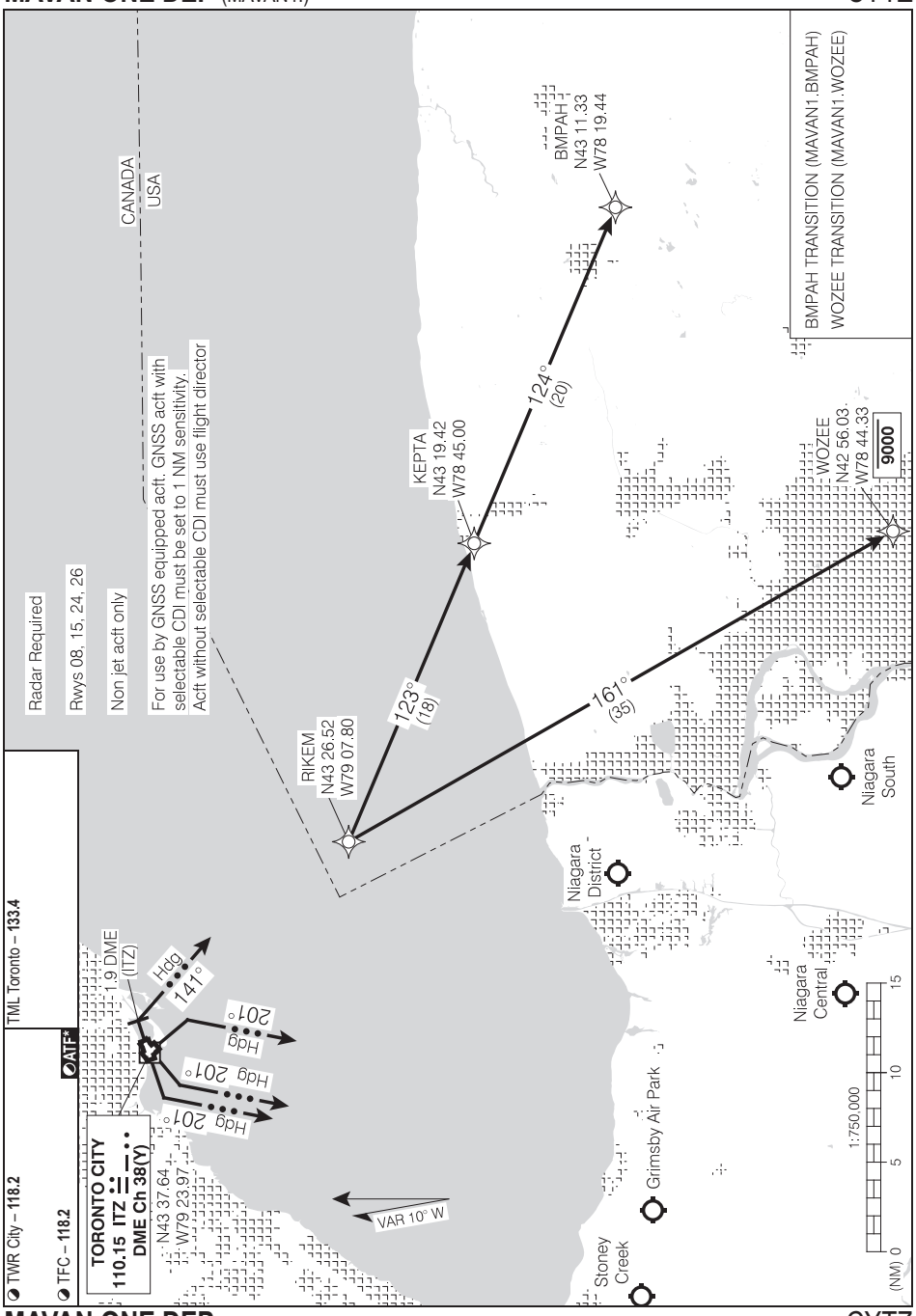
1. Select transponder code 7600;
2. Climb to **3100** on assigned heading;
3. Proceed on course and maintain **4000** or last assigned altitude whichever is higher, then;
4. Climb to flight planned altitude 5 minutes after recognition of the communication failure.

SID (RNAV)

MAVAN ONE DEP (MAVAN1.)

TORONTO/BILLY BISHOP TORONTO CITY AIRPORT, ON

CYTZ



MAVAN ONE DEP (MAVAN1.)

CYTZ

EFF 13 NOV 14

Departure Route Description

Unless otherwise assigned by ATC:

All rwys: Maintain **2000**.

Rwy 08: Requires a minimum climb gradient of **360** ft/NM to **1200**. Depart rwy 08, climb hdg **082°** to 1.9 DME (ITZ). Climbing RIGHT turn hdg **141°** or as assigned. Expect radar vectors to OAKVL (or as assigned) then proceed via depicted route.

Rwy 15: Depart rwy 15, climbing RIGHT turn hdg **201°** or as assigned. Expect radar vectors to OAKVL (or as assigned) then proceed via depicted route.

Rwy 24: Depart rwy 24, climbing LEFT turn hdg **201°** or as assigned. Expect radar vectors to OAKVL (or as assigned) then proceed via depicted route.

Rwy 26: Depart rwy 26, climbing LEFT turn hdg **201°** or as assigned. Expect radar vectors to OAKVL (or as assigned) then proceed via depicted route.

DEPARTURE CLIMB RATE V/V (FPM)

GROUND SPEED	90	120	140	160	180	200	250	300
360 FT/NM	540	720	840	960	1080	1200	1500	1800

ERIE TRANSITION: **(OAKVL1.ERI)**
FOXEE TRANSITION: **(OAKVL1.FOXEE)**
AIRRA TRANSITION: **(OAKVL1.AIRRA)**

Communication Failure

On recognition of failure 5 minutes or less after take-off and in IFR weather conditions proceed as follows:

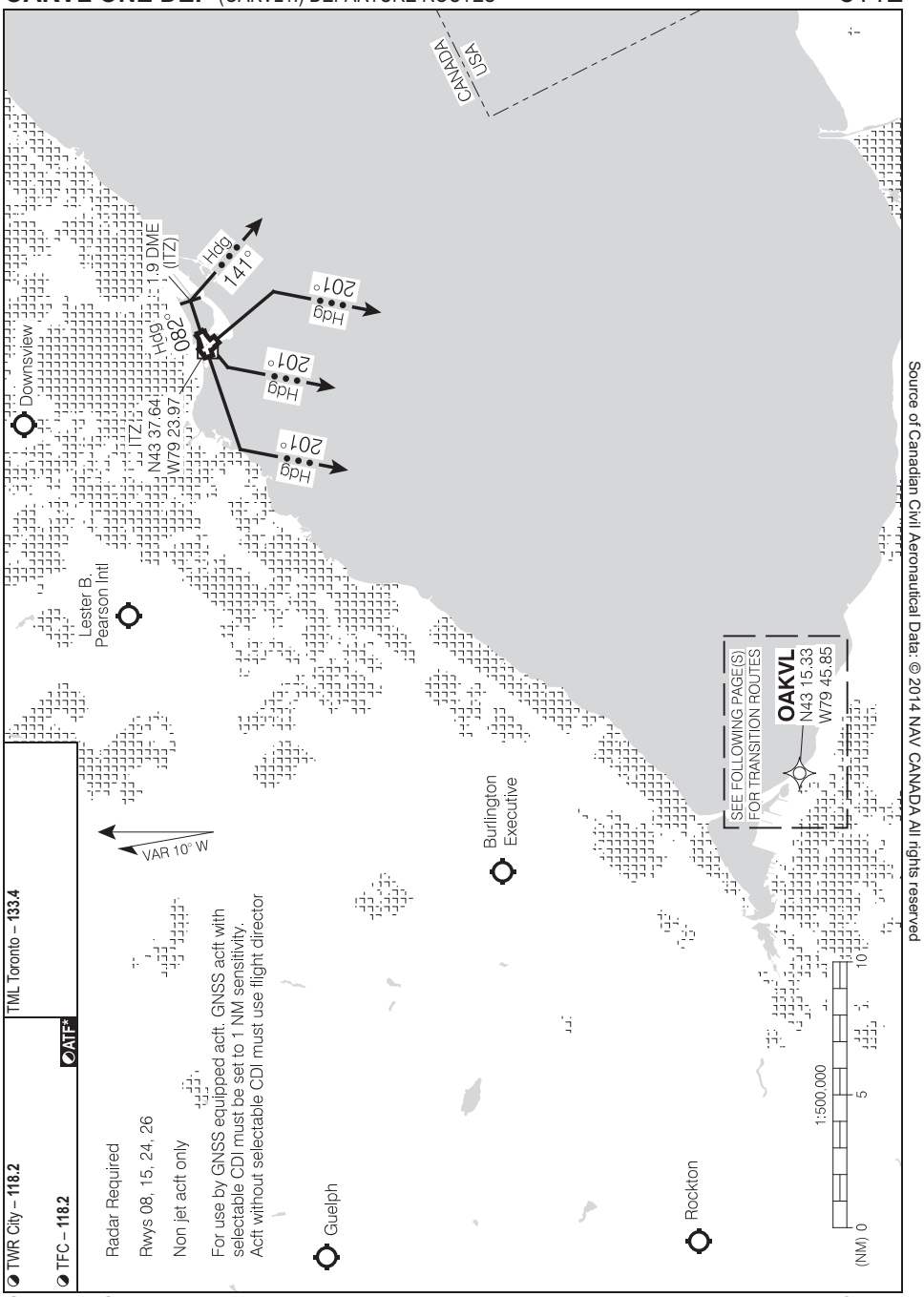
1. Select transponder code 7600;
2. Climb to **3100** on assigned heading;
3. Proceed on course and maintain **4000** or last assigned altitude whichever is higher, then;
4. Climb to flight planned altitude 5 minutes after recognition of the communication failure.

SID (RNAV)

TORONTO/BILLY BISHOP TORONTO CITY AIRPORT, ON

OAKVL ONE DEP (OAKVL1.) DEPARTURE ROUTES

CYTZ



OAKVL ONE DEP (OAKVL1.) DEPARTURE ROUTES

CYTZ

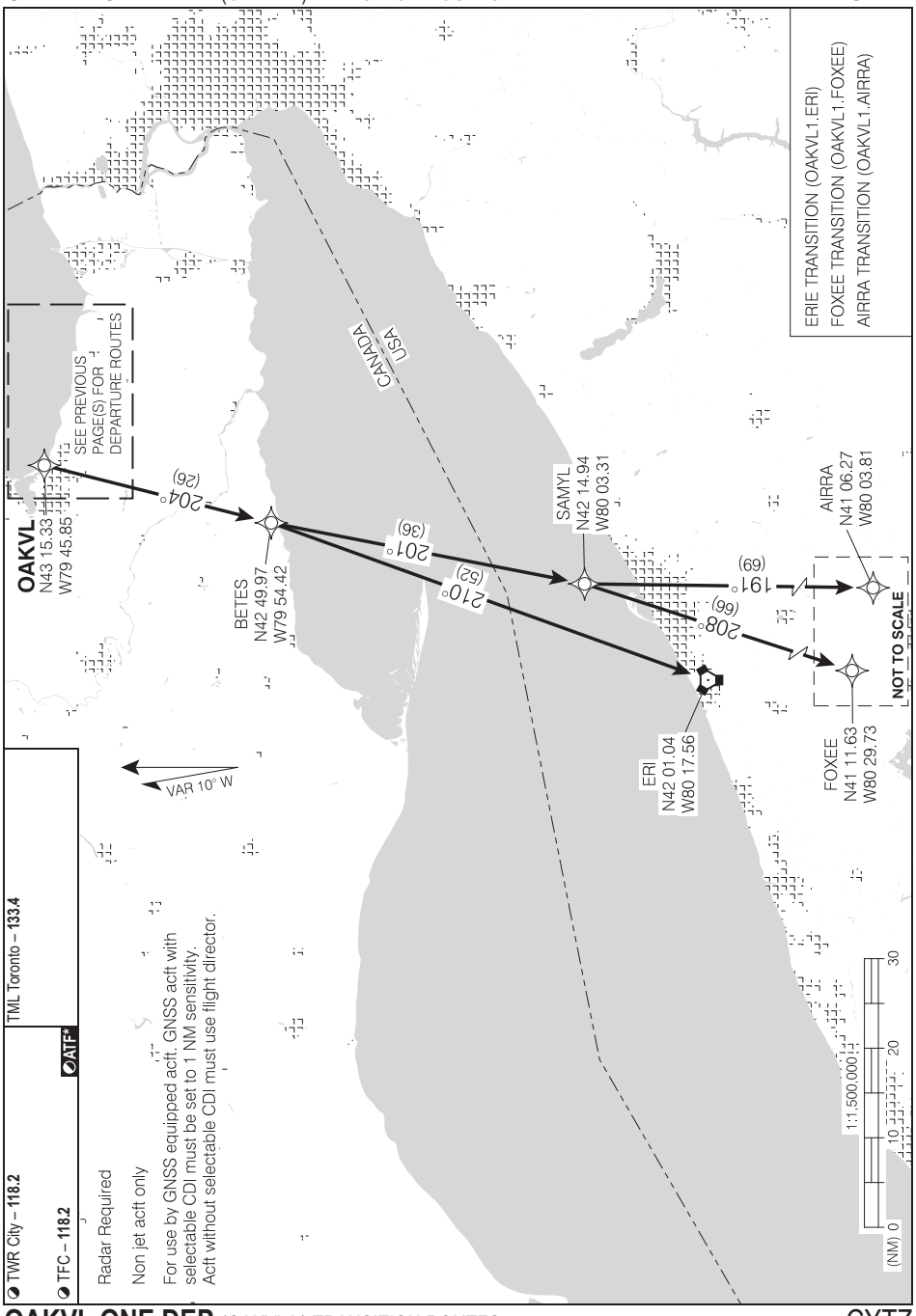
EFF 13 NOV 14

SID (RNAV)

TORONTO/BILLY BISHOP TORONTO CITY AIRPORT, ON

OAKVL ONE DEP (OAKVL1.) TRANSITION ROUTES

CYTZ



OAKVL ONE DEP (OAKVL1.) TRANSITION ROUTES

CYTZ

EFF 13 NOV 14

Departure Route Description

Unless otherwise assigned by ATC:

All rwys: Maintain **2000**.

Rwy 08: Requires a minimum climb gradient of **360** ft/NM to **1200**. Depart rwy 08, climb hdg **082°** to 1.9 DME (ITZ). Climbing RIGHT turn hdg **141°** or as assigned. Expect radar vectors to ANCOL (or as assigned) then proceed via depicted route.

Rwy 15: Depart rwy 15, climbing RIGHT turn hdg **201°** or as assigned. Expect radar vectors to ANCOL (or as assigned) then proceed via depicted route.

Rwy 24: Depart rwy 24, climbing LEFT turn hdg **201°** or as assigned. Expect radar vectors to ANCOL (or as assigned) then proceed via depicted route.

Rwy 26: Depart rwy 26, climbing LEFT turn hdg **201°** or as assigned. Expect radar vectors to ANCOL (or as assigned) then proceed via depicted route.

DEPARTURE CLIMB RATE V/V (FPM)

GROUND SPEED	90	120	140	160	180	200	250	300
360 FT/NM	540	720	840	960	1080	1200	1500	1800

DERLO TRANSITION: **(PERLO1.DERLO)**
GNTRY TRANSITION: **(PERLO1.GNTRY)**
AYLMER TRANSITION: **(PERLO1.YQO)**

Communication Failure

On recognition of failure 5 minutes or less after take-off and in IFR weather conditions proceed as follows:

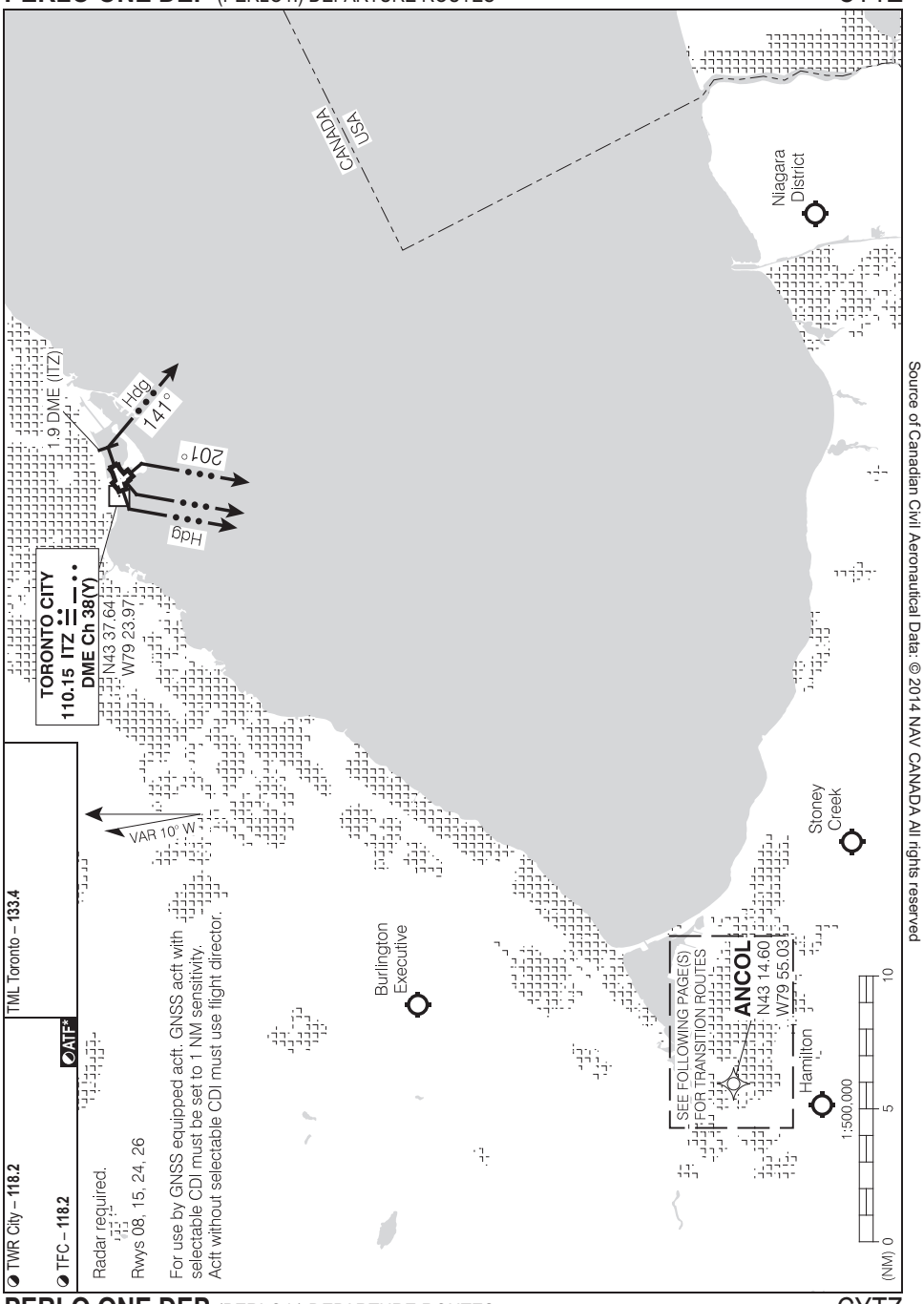
1. Select transponder code 7600;
2. Climb to 3100 on assigned heading;
3. Proceed on course and maintain 4000 or last assigned altitude whichever is higher, then;
4. Climb to flight planned altitude 5 minutes after recognition of the communication failure.

SID (RNAV)

TORONTO/BILLY BISHOP TORONTO CITY AIRPORT, ON

PERLO ONE DEP (PERLO1.) DEPARTURE ROUTES

CYTZ



PERLO ONE DEP (PERLO1.) DEPARTURE ROUTES

CYTZ

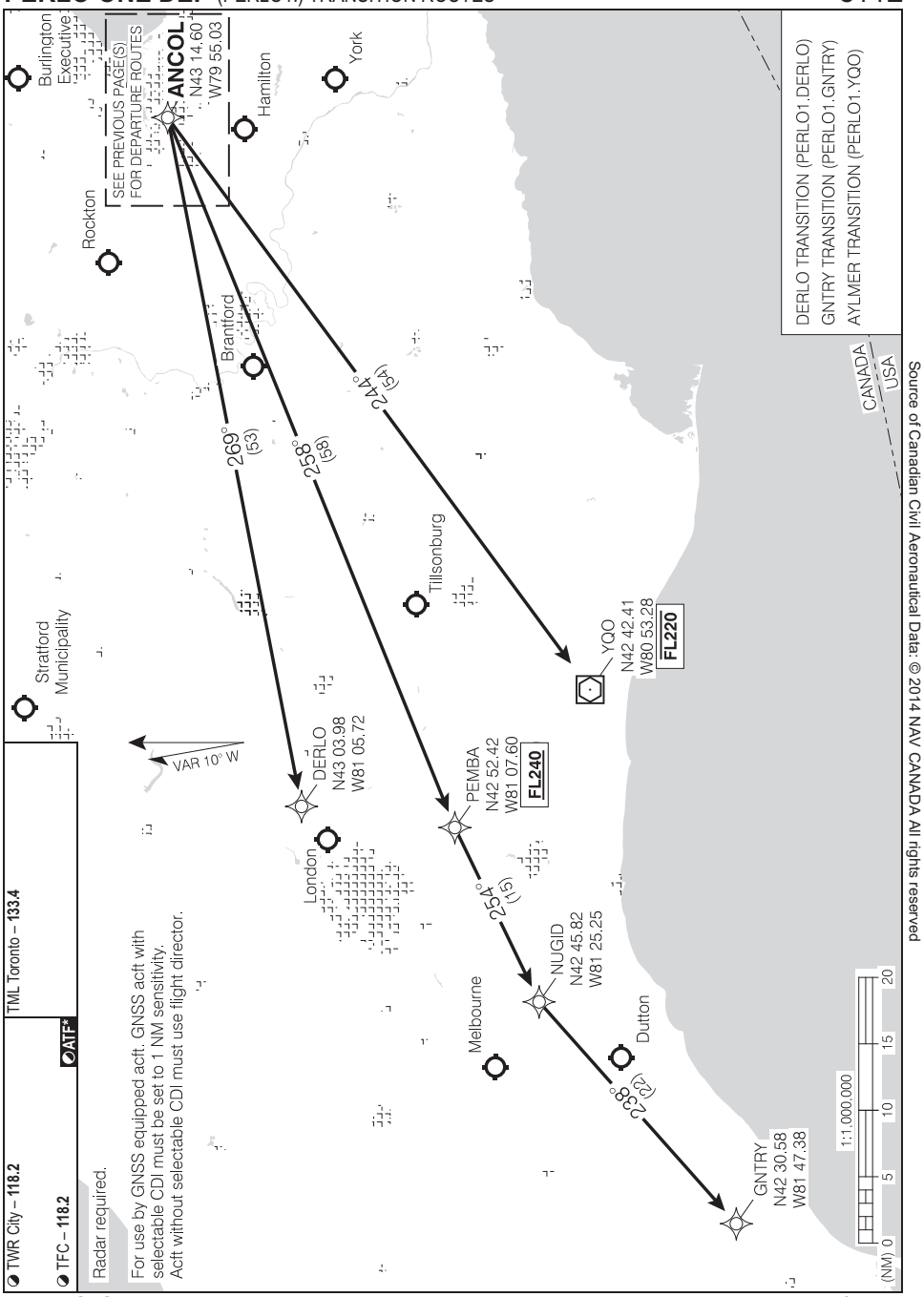
EFF 13 NOV 14

SID (RNAV)

TORONTO/BILLY BISHOP TORONTO CITY AIRPORT, ON

PERLO ONE DEP (PERLO1.) TRANSITION ROUTES

CYTZ



PERLO ONE DEP (PERLO1.) TRANSITION ROUTES

CYTZ

EFF 13 NOV 14

CYTZ-SID-6C

Departure Route Description

Unless otherwise assigned by ATC:

All rwys: Maintain **2000**.

Rwy 08: Requires a minimum climb gradient of **360** ft/NM to **1200**. Depart rwy 08, climb hdg **082°** to 1.9 DME (ITZ). Climbing RIGHT turn hdg **141°** or as assigned. Expect radar vectors to NADUM (or as assigned) then proceed via depicted route.

Rwy 15: Depart rwy 15, climbing RIGHT turn hdg **201°** or as assigned. Expect radar vectors to NADUM (or as assigned) then proceed via depicted route.

Rwy 24: Depart rwy 24, climbing LEFT turn hdg **201°** or as assigned. Expect radar vectors to NADUM (or as assigned) then proceed via depicted route.

Rwy 26: Depart rwy 26, climbing LEFT turn hdg **201°** or as assigned. Expect radar vectors to NADUM (or as assigned) then proceed via depicted route.

DEPARTURE CLIMB RATE V/V (FPM)

GROUND SPEED	90	120	140	160	180	200	250	300
360 FT/NM	540	720	840	960	1080	1200	1500	1800

AHPAH TRANSITION: **(TEVAD1.AHPAH)**

Communication Failure

On recognition of failure 5 minutes or less after take-off and in IFR weather conditions proceed as follows:

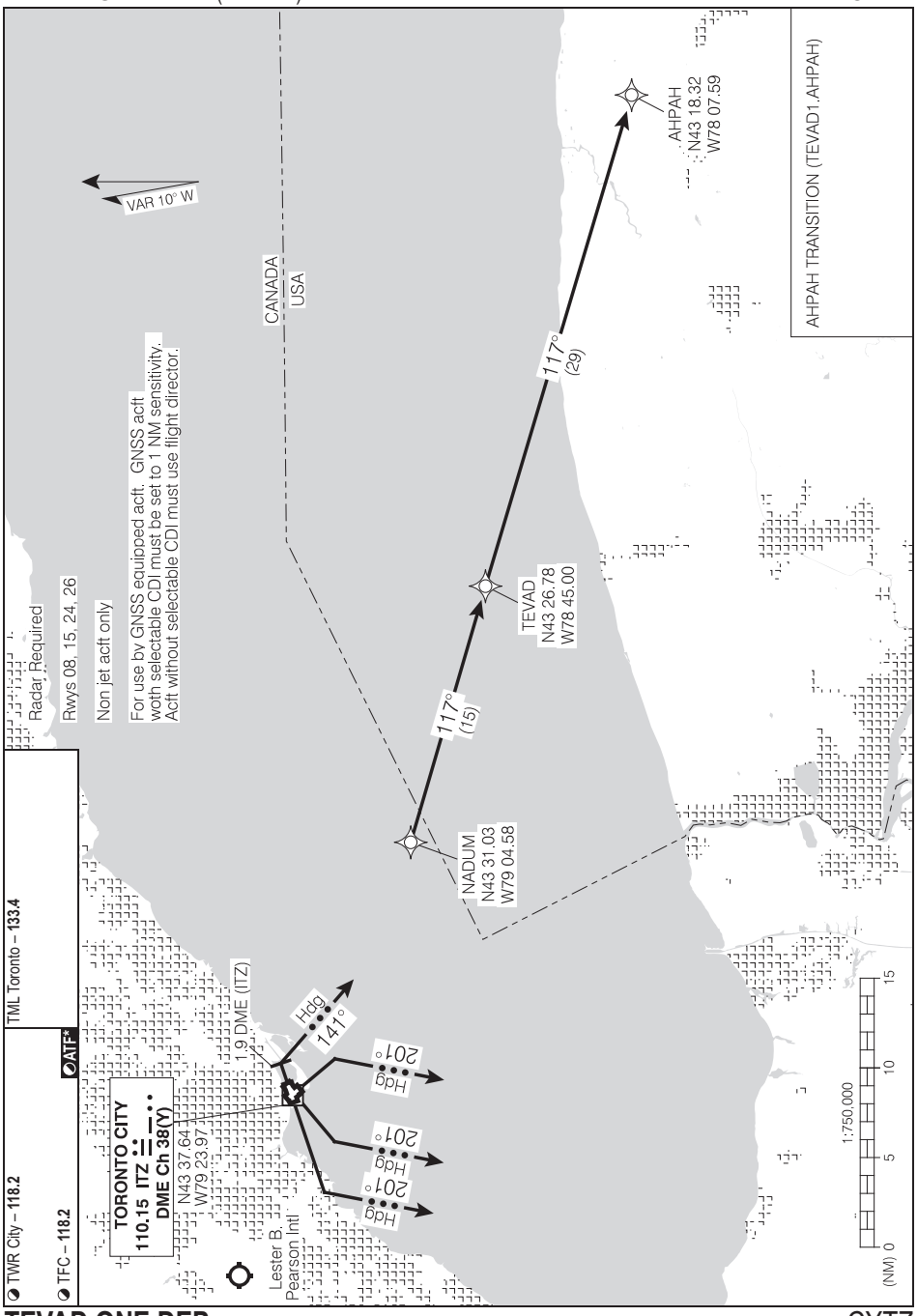
1. Select transponder code 7600;
2. Climb to **3100** on assigned heading;
3. Proceed on course and maintain **4000** or last assigned altitude whichever is higher, then;
4. Climb to flight planned altitude 5 minutes after recognition of the communication failure.

SID (RNAV)

TEVAD ONE DEP (TEVAD1.)

TORONTO/BILLY BISHOP TORONTO CITY AIRPORT, ON

CYTZ



TEVAD ONE DEP (TEVAD1.)

EFF 13 NOV 14

CYTZ

Departure Procedure

Rwy 08 – ½: Requires a minimum climb gradient of **360** ft/NM to **1200**. Climbing right turn hdg **141°** to **2000**. Proceed on course after 5 DME "ITZ".

Note: Ships to **366** ASL aprx 400 past departure end of rwy, both LEFT and RIGHT of rwy centreline.

- or -

SPEC VIS - Climb visual over aprt to **2400** BPOC.

Rwy 15 – ½: Climbing RIGHT turn hdg **201°** to **2000**. Proceed on course after 6 DME "ITZ".

Note: Trees to **328** ASL aprx 250 past departure end of rwy, 550 LEFT of rwy centreline. Antennas to **400** ASL aprx 0.6 NM past departure end of rwy, 1450 LEFT of rwy centreline.

Rwy 24 – ½: Climbing left turn hdg **201°** to **2000**. Proceed on course after 3 DME "ITZ".

Note: Ships to **366** ASL aprx 600 past departure end of rwy, both LEFT and RIGHT of rwy centreline.

Rwy 26 – ½: Climbing LEFT turn hdg **201°** to **2000**. Proceed on course after 5 DME "ITZ".

Note: Ships to **366** ASL aprx 400 past departure end of rwy, both LEFT and RIGHT of rwy centreline.

DEPARTURE CLIMB RATE V/V (FPM)

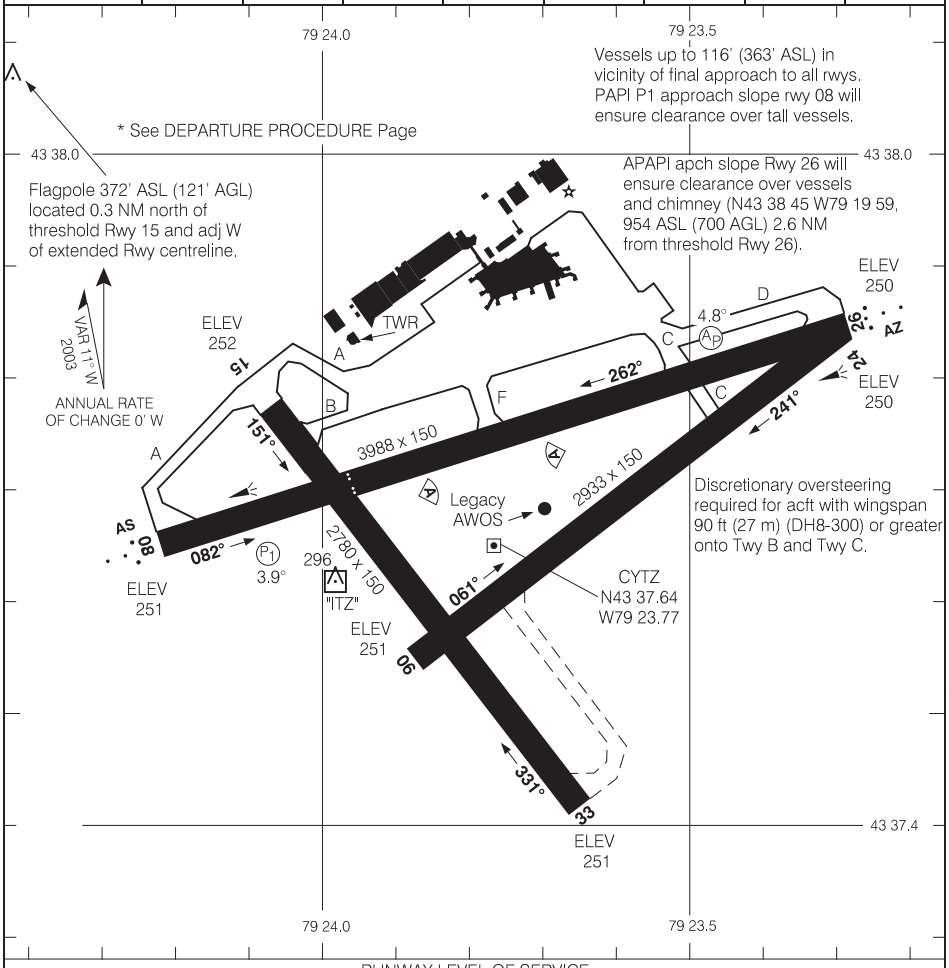
GROUND SPEED	90	120	140	160	180	200	250	300
360 FT/NM	540	720	840	960	1080	1200	1500	1800

TORONTO/BILLY BISHOP TORONTO CITY AIRPORT, ON

AERODROME CHART — CYTZ

ATIS – **133.6** AWOS – **133.6**	GND – **121.7**	TWR City – **118.2** TFC – **118.2** ATF*	TML Toronto – **133.4**

DECL DISTS	06	24	08	26	15	33		
TORA	2933	2933	3988	3988	2780	2780		
TODA	3233	3383	4338	4338	3230	2980		
ASDA	2933	2933	3988	3988	2780	2780		
LDA	2933	2933	3988	3988	2780	2780		



RUNWAY LEVEL OF SERVICE	
RVO	LVO
RWY 08, 26: RVR 1200	NOT AUTHORIZED

TAKE-OFF MINIMA	SCALE IN FEET
Rwys 08, 15, 24, 26: * Rwys 06, 33: NOT ASSESSED	1000 0 1000

AERODROME CHART — CYTZ

EFF 13 NOV 14

Appendix B

BOMBARDIER DASH 8 NOISE DATA

Type Certificate Holder[1] **Bombardier Inc.**

Aircraft Type Designation[1] **DHC-8-301**

Engine Manufacturer[1] **Pratt & Whitney Canada**

Engine Type Designation[1] **PW123**

Additional modifications essential to meet the requirements or needed to attain the certificated noise levels[1] **None**

Noise Certification Basis **ICAO Annex 16, Volume I** Edition / Amendment **2 Edition** Chapter[1] **3**

EASA Record No.	Propeller Manufacturer [1]	Propeller Type Designation [1]	Maximum Mass		Lateral/Full Power EPNL		Flyover EPNL		Approach EPNL		See Note
			Take-off [1] (kg)	Landing [1] (kg)	Level [1]	Limit	Level [1]	Limit	Level [1]	Limit	
B1004	**Hamilton Standard**	**14SF-15**	**18,643**	**18,144**	**87.4**	**94.0**	**84.3**	**89.0**	**98.9**	**98.0**	**-**
B996	**Hamilton Standard**	**14SF-23**	**18,643**	**18,144**	**87.4**	**94.0**	**84.3**	**89.0**	**98.9**	**98.0**	**-**

[1] See Note 1.

Type Certificate Holder[1] **Bombardier Inc.**

Aircraft Type Designation[1] **DHC-8-402**

Engine Manufacturer[1] **Pratt & Whitney Canada**

Engine Type Designation[1] **PW150A**

Additional modifications essential to meet the requirements or needed to attain the certificated noise levels[1] **None**

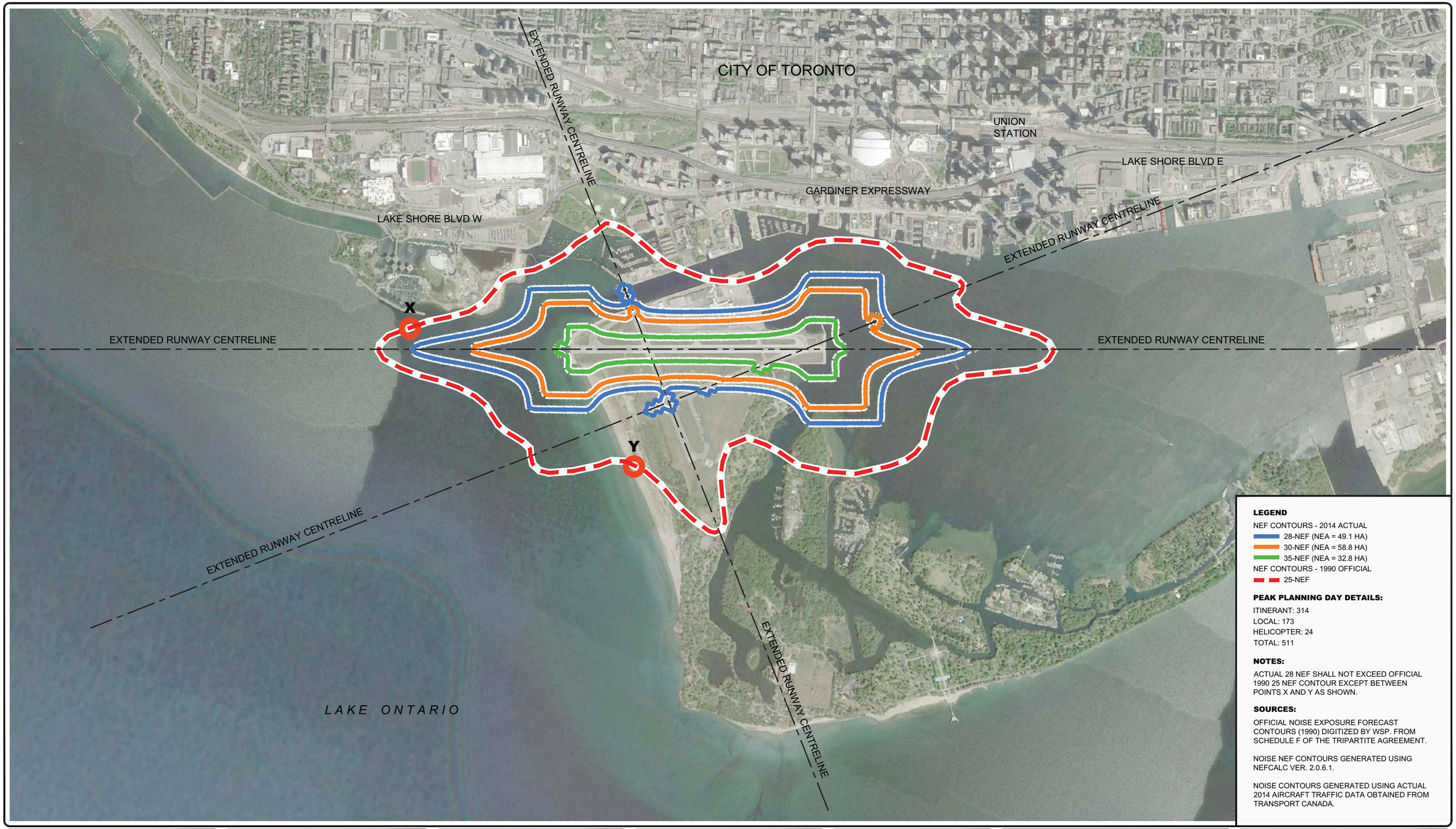
Noise Certification Basis **ICAO Annex 16, Volume I** Edition / Amendment **4 Edition / Amendment 8** Chapter[1] **4**

EASA Record No.	Propeller Manufacturer [1]	Propeller Type Designation [1]	Maximum Mass		Lateral/Full Power EPNL		Flyover EPNL		Approach EPNL		See Note
			Take-off [1] (kg)	Landing [1] (kg)	Level [1]	Limit	Level [1]	Limit	Level [1]	Limit	
B1061	**Dowty Rotol**	**R408/6-123-F/17**	**29,574**	**28,123**	**84.0**	**94.0**	**78.6**	**89.0**	**94.8**	**98.0**	**-**
B1059	**Dowty Rotol**	**R408/6-123-F/17**	**29,257**	**28,009**	**84.0**	**94.0**	**78.3**	**89.0**	**94.8**	**98.0**	**-**
B1057	**Dowty Rotol**	**R408/6-123-F/17**	**28,998**	**28,009**	**84.0**	**94.0**	**78.0**	**89.0**	**94.8**	**98.0**	**-**
B1055	**Dowty Rotol**	**R408/6-123-F/17**	**28,690**	**27,783**	**84.1**	**94.0**	**77.8**	**89.0**	**94.9**	**98.0**	**-**
B1053	**Dowty Rotol**	**R408/6-123-F/17**	**27,987**	**27,442**	**84.1**	**94.0**	**77.1**	**89.0**	**94.9**	**98.0**	**-**

[1] See Note 1.

Appendix C

NOISE CONTOUR MAP 2014 ACTUAL



LEGEND

NEF CONTOURS - 2014 ACTUAL
- 28-NEF (NEA = 49.1 HA)
- 30-NEF (NEA = 58.8 HA)
- 35-NEF (NEA = 32.8 HA)

NEF CONTOURS - 1990 OFFICIAL
- 25-NEF

PEAK PLANNING DAY DETAILS:

ITINERANT: 314
LOCAL: 173
HELICOPTER: 24
TOTAL: 511

NOTES:

ACTUAL 28 NEF SHALL NOT EXCEED OFFICIAL 1990 25 NEF CONTOUR EXCEPT BETWEEN POINTS X AND Y AS SHOWN.

SOURCES:

OFFICIAL NOISE EXPOSURE FORECAST CONTOURS (1990) DIGITIZED BY WSP. FROM SCHEDULE F OF THE TRIPARTITE AGREEMENT.

NOISE NEF CONTOURS GENERATED USING NEFCALC VER. 2.0.6.1.

NOISE CONTOURS GENERATED USING ACTUAL 2014 AIRCRAFT TRAFFIC DATA OBTAINED FROM TRANSPORT CANADA.

No.	DATE	DESCRIPTION	BY	QA/QC
2	01/29/2016	FINAL	PRM	RLP
1	01/18/2016	REVISED DRAFT	PRM	RLP
0	01/15/2016	DRAFT	PRM	RLP

REVISION / ISSUE

Notes
1. DRAWING IS TO BE USED FOR PLANNING PURPOSES ONLY.
2. AERIAL PHOTOGRAPHY DATED 05/05/2015, EXTRACTED FROM GOOGLE EARTH PRO 2015.

Consultant: WSP

Client: Transport Canada

North Arrow

Scale

Scale 1:20000

100 0 50 150 250 500 750 METRES

500 0 250 500 1000 2500 FEET

SCALE BASED ON SHEET SIZE 11" X 17"

Location: TORONTO, ONTARIO

Airport: BILLY BISHOP TORONTO CITY AIRPORT (CYTZ)

Title: **2014 EXISTING CONDITIONS NEF CONTOURS - WITH HELICOPTERS**

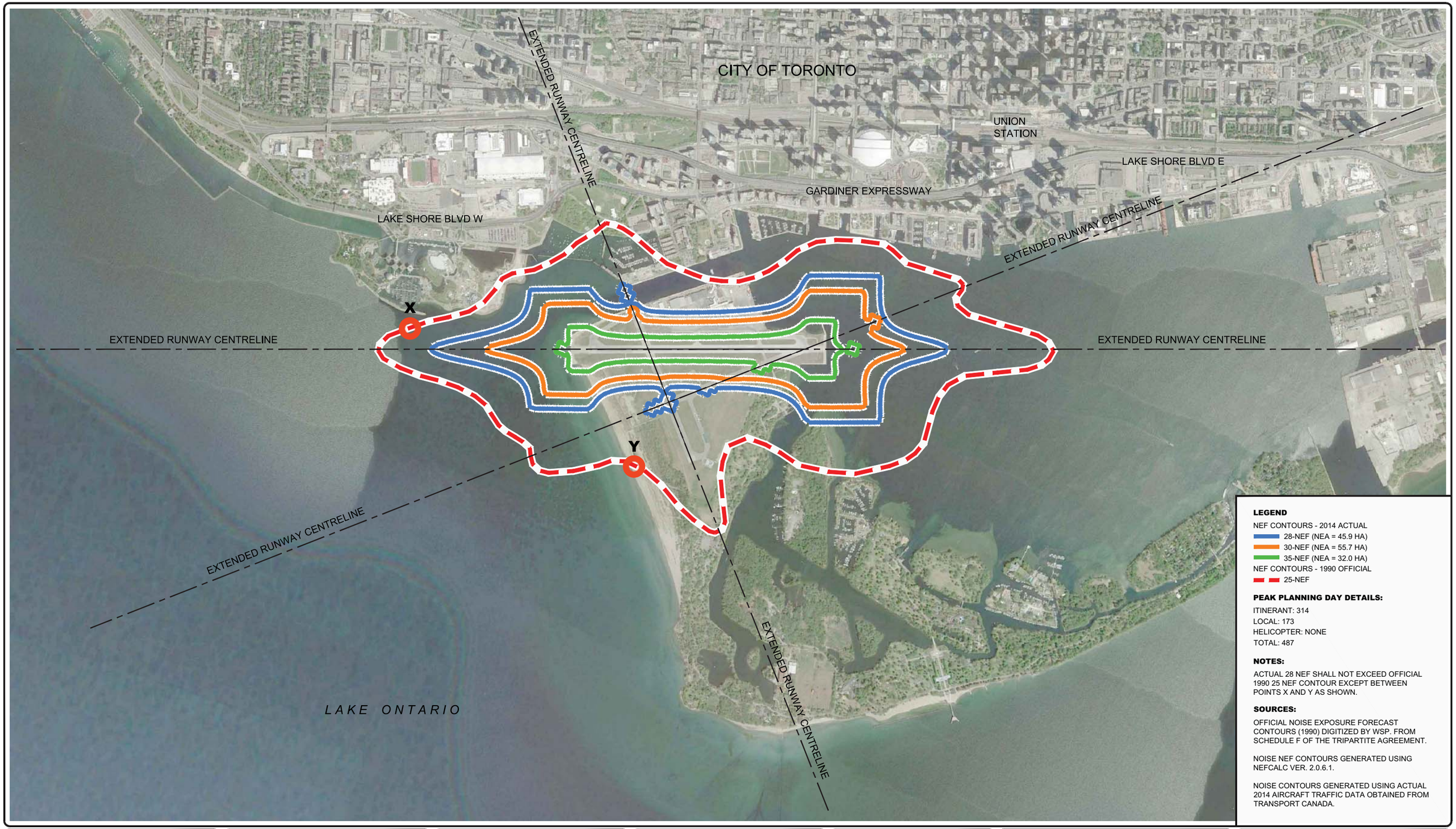
Project No. 151-09071-00

FIGURE 1

P:\CYTZ\151-09071-00 BBTCA 2014 Noise Exp Contour Rpts\CAD\FIG 1.dwg
January 29, 2016

Appendix D

NOISE CONTOUR MAP 2014 NO HELICOPTERS



LEGEND

NEF CONTOURS - 2014 ACTUAL
- 28-NEF (NEA = 45.9 HA)
- 30-NEF (NEA = 55.7 HA)
- 35-NEF (NEA = 32.0 HA)

NEF CONTOURS - 1990 OFFICIAL
- 25-NEF

PEAK PLANNING DAY DETAILS:

ITINERANT: 314
LOCAL: 173
HELICOPTER: NONE
TOTAL: 487

NOTES:

ACTUAL 28 NEF SHALL NOT EXCEED OFFICIAL 1990 25 NEF CONTOUR EXCEPT BETWEEN POINTS X AND Y AS SHOWN.

SOURCES:

OFFICIAL NOISE EXPOSURE FORECAST CONTOURS (1990) DIGITIZED BY WSP. FROM SCHEDULE F OF THE TRIPARTITE AGREEMENT.

NOISE NEF CONTOURS GENERATED USING NEFCALC VER. 2.0.6.1.

NOISE CONTOURS GENERATED USING ACTUAL 2014 AIRCRAFT TRAFFIC DATA OBTAINED FROM TRANSPORT CANADA.

No.	DATE	DESCRIPTION	BY	QA/QC
2	01/29/2016	FINAL	PRM	RLP
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0	01/15/2016	DRAFT	PRM	RLP

REVISION / ISSUE

Notes
1. DRAWING IS TO BE USED FOR PLANNING PURPOSES ONLY.
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Consultant: WSP

Client: Transport Canada

North Arrow

Scale

Scale 1:20000

100 0 50 150 250 500 750 METRES

500 0 250 500 1000 2500 FEET

SCALE BASED ON SHEET SIZE 11" X 17"

Location: TORONTO, ONTARIO

Airport: BILLY BISHOP TORONTO CITY AIRPORT (CYTZ)

Title: **2014 EXISTING CONDITIONS NEF CONTOURS - NO HELICOPTERS**

Project No. 151-09071-00

FIGURE 2

P:\CYTZ\151-09071-00 BBTCA 2014 Noise Exp Contour Rpts\CAD\FIG 2.dwg
January 29, 2016