## **Tutorial for Processing Trimble GPS Data**

- 1. Turn the GPS unit on. Make sure that you have **exited the Terrasync program** on the GPS unit the data will not transfer if Terrasync is open! Connect the GPS unit to the computer with a USB cord.
- 2. Find GPS Pathfinder Office on the Desktop and click to launch the program.
- 3. If the Time Zone Settings screen appear, select Eastern Standard or Eastern Daylight time depending on the season.

Season	Time
Winter	Eastern Standard Time USA
Summer	Eastern Daylight Time USA

<u>T</u> ime Zone:		OK
Eastern Std USA	•	Cancel
Time difference from UTC:	-5:00	
<u>N</u> ew Time Zor	ie	Delete

4. The Select Project Window is the next window to appear. **Do not press "OK" without changing the Project Name and Project Folder.** In Select Project, click "New" and create a file name for your data (such as "GPS export June 1").

ioject Name.	Default	
omment:	Default Project	Help
Default folder for		
Project Folder:	C:\Users\cdwyer\Documents\GNSS Projects\Default	
Backup files:	C:\Users\cdwyer\Documents\GNSS Projects\Default\Backup	
Export files:	C:\Users\cdwyer\Documents\GNSS Projects\Default\Export	
Base files:	C:\Users\cdwyer\Documents\GNSS Projects\Default\Base	
	New   Remove   Modify	

5. In Project Name, name your project. Next to "Project Folder," click "Browse" and choose the location where you would like to save your data (most likely the Desktop or your J: Drive).

Project Folders		Press OK. The
Proiect Name:	Test	"Default Folder"
<u>C</u> omment:	Thursday, April 05, 2012 11:48:29 am	area should now
Project <u>F</u> older:	J:\\Browse	indicate that your
Backup Folder:	Backup Browse	files will be
Export Folder:	Export Browse	saved to the
B <u>a</u> se File Folder:	Base Browse	location vou
OK	Cancel De <u>f</u> ault <u>H</u> elp	chose.



- 6. Click "OK" once more to close the Project Folder menu.
- 7. All of the tools that we use for processing data in Pathfinder Office are in the **Utilities** menu in the top menu bar of the program (between **Data** and **Options**). Open the **Data Transfer** utility (Utilities → Data Transfer).
- 8. In the Data Transfer Screen, make sure the GPS unit is connected to the computer (green circle). To add data from your GPS unit, click on add.

Data Transfer levice GIS Datalogger o leceive Send	n Windows Mobi		<b>D-0</b> 100	Devices	Connected to Windo	GIS Datalogger o ws Mobile.
Files to Receive	Size elect files.	Data Type	Destination			Add ▼ Remove All Remove All
<u></u>				<u>S</u> ettings	Help	

9. In the data transfer file, add data by clicking on your data files so that they turn blue. If you would like to transfer multiple files, hold down the CTRL key while clicking each file. Then, click "Open."

Look in:	GIS Datalogger on Window	s Mol 💌 🏦	8-8- 8-8-
R032708A	d	ay4 sight light 4-3-20	012
geomorph 🛛			
day 3 lights clark	center 3-27-2012		
day 3 sitelights cl	ark center 3-27-2012		
	1		
R040214A 11000	hant		

10. Now the file(s) will transfer from the device to the computer. Make sure the right file(s) are attached by looking at the "Files to Receive" list. Click Transfer All (see image on next page).

GIS Datalogger on Windows Mobile		
Receive Send		Connected to GIS Datalogger on Windows Mobile.
Files to Receive		
File Size Data Type Des day4 sight light 4 1746 Data File	tination	<u>A</u> dd ▼
J:\		<u>R</u> emove
		Remove All
		<u>T</u> ransfer All

 The screen "Transfer Complete" should show up. Click close. If your data did not successfully transfer, try again, by adding the data again.

Transfer Completed	53
1 File(s) Successfully Transferred.	

- 12. Now, return to Utilities menu and open the **Differential Correction** utility. (If your data was not collected in Western Massachusetts and/or you don't know if there was a GPS Base Station nearby, you can skip the Differential Correction steps).
- 13. When you open the Differential Correction Wizard, the files you transferred in steps 8-11 should show up automatically under "Select SSF Files to Correct." Make sure all the files are highlighted. Then click "Next" for the three windows shown below.



14. For the Base Provider Search press Select and choose CORS, NORTHAMPTON (HAMP), MASSACHUSETTS (or the closest base station provider if your data was not collected in Western Mass). Press OK, then click Next.

Data Data Base Provider Search	Select			
Select Base Provider				x
Provider	L2 G	Distance	Integrity Index	
CORS, NORTHAMPTON (HAMP), MASSACH	USETTS ×	0 km	94.93	
👗 CORS, EAST GRANBY (CTEG), CONNECTIO	UT ×	44 km	94.49	and a second
🙎 CORS, WINCHESTER (CTWI), CONNECTIO	Л ×	59 km	94.34	
👗 UNAVCO, Storrs, CT (sg29)*	×	64 km	?	
👗 UNAVCO, Storrs, Connecticut (sg39)*	×	65 km	?	
🙎 CORS, DUMMERSTON (VTD2), VERMONT	×	67 km	7	
& Vtrans - Dummerston, VT	×	67 km	?	Ŧ
Show Base Providers of Type: All ty	pes	•	Update List	
Base Provider				
New Copy	Properties	Delete,		
Help		OK	Cancel	

15. Click "Start" for the last window of the Differential Correction Wizard.

Differential Correc	ction Wizard			
	Output Folder	as the input file		
	Output Filename C Create a unique filena C Use original filename,	ame based on the in overwriting any exi	nput filename sting .cor file.	
77	< <u>B</u> ack	Start	Cancel	Help

16. After pressing start, there will be a summary of the corrected positions. If you used a Trimble Juno, most of the corrected data should fall in the 2-5 meter accuracy range. Look at the "Differential Correction Summary" to make sure most of your positions were. Click close.



- 17. Now return to the Utilities menu and choose **Export**.
- 18. Your corrected file(s) from steps 12-16 should appear automatically in the "Selected Files" area. (If there is nothing there, you will need to click "Browse" and navigate to find your file.)
- 19. In "Choose an Export Setup," select "Sample ESRI Shapefile Setup" from the drop-down list.

Folder: <u>B</u> rowse	Cancel <u>H</u> elp
J:\Geo 251- Geomorphology\Lab 10 Connecticut River Selected Files: R242_040913A.cor utput Folder \Geo 251- Geomorphology\Lab 10 Connecticut River\Export Choose an Export Setup Sample ESEL Shapefile Setup	Cancel <u>H</u> elp
Selected Files:  R242_040913A.cor  utput Folder  Geo 251- Geomorphology\Lab 10 Connecticut River\Export  Choose an Export Setup  Sample ESEL Shapefile Setup	<u>H</u> elp
R242_040913A.cor  Itput Folder  Geo 251- Geomorphology\Lab 10 Connecticut River\Export  Choose an Export Setup  Sample ESEL Shapefile Setup	
tput Folder Geo 251- Geomorphology\Lab 10 Connecticut River\Export	
Choose an Export Setup	Prowee
2hoose an Export Setup	DIOWSE
Sample ESBI Shapetile Setup	
Format: ESRI Shapefile	
Type of Export: Features - Positions and Attributes	
Uutput Uption: Lombine and output to Export folder	

- 20. Press "Properties" at the lower right hand corner. Click on the Attributes tab. Under All Feature Types, select:
  - Date Recorded
  - Time Recorded
  - Feature Name
  - Total Positions
  - Filtered Positions

Select other features that you find necessary. Note that any attributes you collected in the field (such as a comment, or data in a data dictionary) will be exported automatically.

1		195	1161
Data Output	Attributes	Units	Position Filter
Export Menu Att	ributes As -		
	Value		
C Code Va	lue <u>1</u>	C	<sup>°</sup> Code Value <u>2</u>
Generated Attrib	outes ypes		
Feature N	lame		*
Data File	Name		
✓ Total Pos	itions		
	ionary Name		
GPS Wee	ek		=
GPS Sec	ond		*
GPS Sec	ond		-

Export Setup Properties - Sample ESRI Shapefile S

21. Now click on the Coordinate System tab. Press "Use Export Coordinate System" and click "Change".

Data   Output   Attributes	Units Position	n Filter Coordinate	System	ESRI Shapefile
• Use Export Coordinate S	ystem			<u>C</u> hange
Site: System:	US State Pla	ane 1983		
	Managhura	tto Mainland 2001		
Zone:	Massachuse	aus mannand 2001		
Zone: Datum: Coordinate Units:	NAD 1983 (C	Concus)		

- 22. In "Use Export Coordinate System" **use the same system, zone and datum that collected the GPS points.** If the points were collected in at Smith College (or in Massachusetts), the standard is:
  - System: US State Plane 1983
  - Zone: Massachusetts Mainland 2001
  - Datum: NAD 1983 (Conus)
  - Altitude Measured From: Mean Sea Level (MSL)
  - Coordinate Units: Meters
  - Altitude Units: Feet

See image on next page

Select By	tem and Zone	OK Cancel
system:	US State Plane 1983	Help
Zone:	Massachusetts Mainland 2001	<u> </u>
<u>D</u> atum:	NAD 1983 (Conus)	<b>•</b>
- Altitude Measured I C Height Above I	From	
- Altitude Measured I <u>Height Above I</u> <u>Mean Sea Lev</u>	From Ellipsoid (HAE) el (MSL)	
Altitude Measured I <u>Height Above I</u> <u>Mean Sea Lev</u> Geoid Model- <u>C</u> Defined <u>G</u> e	From Ellipsoid (HAE) el (MSL) eoid (GEOID09 (Conus))	
-Altitude Measured I <u>Height Above I</u> Mean Sea Lev Geoid Model- Geoid Model- <u>Geoid Model-</u> <u>Geoid Model</u>	From Ellipsoid (HAE) el (MSL) eoid (GEOID09 (Conus))	
-Altitude Measured I <u>Height Above I</u> Mean Sea Lev Geoid Model- Geoid Model- <u>Geoid Model</u> <u>Geoid</u> <u>Geoid</u> :	From Ellipsoid (HAE) el (MSL) eoid (GEOID09 (Conus)) GEOID09 (Conus)	]
- Altitude Measured I <u>Height Above I</u> <u>Geoid Model</u> <u>Geoid Model</u> <u>Geoid Model</u> <u>Geoid</u> <u>Geoid</u> <u>Geoid</u>	From Ellipsoid (HAE) el (MSL) eoid (GEOID09 (Conus)) GEOID09 (Conus)	]

23. On the bottom of the Coordinate System tab, you need to set the *Projection* of the data. Under "Projection File" select "Browse". Navigate through these folders to select: NAD 1983 StatePlane Massacusetts FIPS 2001 (Meters).Prj.

Q: → ArcGIS 10 Coordinate System Files and Projections → Coordinate Systems → Projected Coordinate Systems → State Plane → NAD 1983 (Meters) → NAD 1983 StatePlane Massacusetts FIPS 2001 (Meters)

Click "OK" to add this projection to the coordinate system properties screen.

24. Press "OK" to close the Properties menu, then click "OK" in the upper right of the Export window to export your data. After the export is completed, click "Close".

