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The Rocky Mountain Coordinate Reference System is based on a group of low distortion map projection coordinate systems. Low distortion projections are based on true conformal map projections designed to cover significant portions of urban and rural areas of the state. The term "low distortion" refers to both the horizontal distortion from presenting a curved surface on a plane, and the vertical distortion because these projections are also scaled to a regional height representative of the area to be covered.

A custom Trimble Coordinate System Database has been created to easily allow Montana surveyors to utilize the RMCRS projections. This document outlines the process to load this database into Trimble Access for use in the field.

• The first step is to go to the <u>MARLS website</u>. From there, pick the *Resources* menu, then *RMCRS Information*.



• At the top of the page, select the link: **RMCRS Zone Export (Parameters: Leica, Trimble)**

ROCKY MOUNTAIN COORDINATE REFERENCE
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• In the section for *RMCRS Zone Export (Parameters)*, you will find a link called *custom.csd*. Picking on the link will download the custom.csd database file which contains the RMCRS LDP's.

RMCRS ZONE EXPORT (PARAMETERS)

Trimble custom.csd The current custom.csd is for Trimble's Coordinate System Manager program; see the README file for instructions.

• If you have Trimble's office software loaded on your PC, you can open the *custom.csd* file to see the LDP's that it contains. To see the LDP's, double-click *Coordinate Systems*, then *RMTCRS*. On the right side of the screen, you will then be able to see all the LDP's and their parameters.



To utilize the file in Trimble Access, it first needs to be copied over to your field controller. This
example shows a Windows 10-based controller. The process for an Android-based controller is
slightly different, but the Trimble folder structure is the same. An Android-based controller can
be connected right to your computer and the file can be copied from there. If using a Windows
10-based controller, it is recommended to copy the file over via USB drive.





- On the controller, locate the *Trimble Data* folder.
 - Windows 10- c:/Program Data/Trimble/Trimble Data
 - You may need to configure your folder settings to show hidden folders
 - Android- Trimble Data should be available in the root directory of the device.
- Once the Trimble Data folder is located, open it, then locate and open System Files.
- When you have the System Files folder opened, *copy/paste* the *custom.csd* file into it.



- Now that the file has been copied to your *Trimble Data/System Files* folder, you can open Trimble Access. If it is currently open, it needs to be closed and restarted.
- In Trimble Access, create/open a project, then create a new Job.

Trimble Access						
\leftarrow	Tech Support					
New	Filter job					
£_i ↑	No folders					
🛞 Minorca Control LLH						
Minorca Plant Calibration						
④ 67	71120 TOPO					





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• In the New Job screen, pick the box to change your coordinate system.

Create from	template	 Create from JobXML or DC file 	
ob name	test		e
emplate	Last used job 🔻		
Properties			Local site
Coord. sys.		Local site	
Jnits (Dist.)		US survey feet	
ayer manager		None	
eature library		None	
Cogo settings		Ground	
Additional settings		Off	
/ledia file		Previous point	
Reference	?		
Description	?		
Operator	?		
Notes	?		

• In the next screen, choose *Select from library*.

Trimble Access
Select coordinate system
Select coordinate system
Scale factor only
Select from library
Key in parameters
No projection / no datum
Broadcast RTCM





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- You will now be in the *Select coordinate system* screen.
- Under the *System* pull-down, select *RMTCRS* from the list.
- Once *RMTCRS* is selected, you will see the list of LDP's available in the *Zone* pull-down list. From here you can pick your desired zone, Geoid Model, coordinate type, etc. and then pick Store.

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Select coordinate system		Big Timber		
		Billings		
System RMTCRS		Blackfeet Indian Reservation		
Local datum		Bobcat		
NAD 1983 (Conus) (Mol)		Butte		
Global reference datum NAD83(2011)		Cannon Ferry		
Displacement model		Crow Indian Reservation		
HTDP V3.2.9		Flathead Oblique Mercator		
Use geoid model		Fort Belknap Indian Reservation		
Yes		Fort Peck Indian Res-Assiniboine	•	
Use datum grid		Fort Peck Indian Res-Sioux		
No		Tort Peck Indian Res-Sloux		
Project height		Interstate Oblique Mercator		
1510.00051	•	Milk River		
		Mission		
Esc	4	Missoula		Store

• You are now ready to survey in your desired RMTCRS projection.

If you need any additional assistance in this process, you can contact Frontier Precision at **(855) 208-8005** or email us at **survey_support@frontierprecision.com**.