

## Solution to Exercise 4

WATR 404/604

First Semester 2018

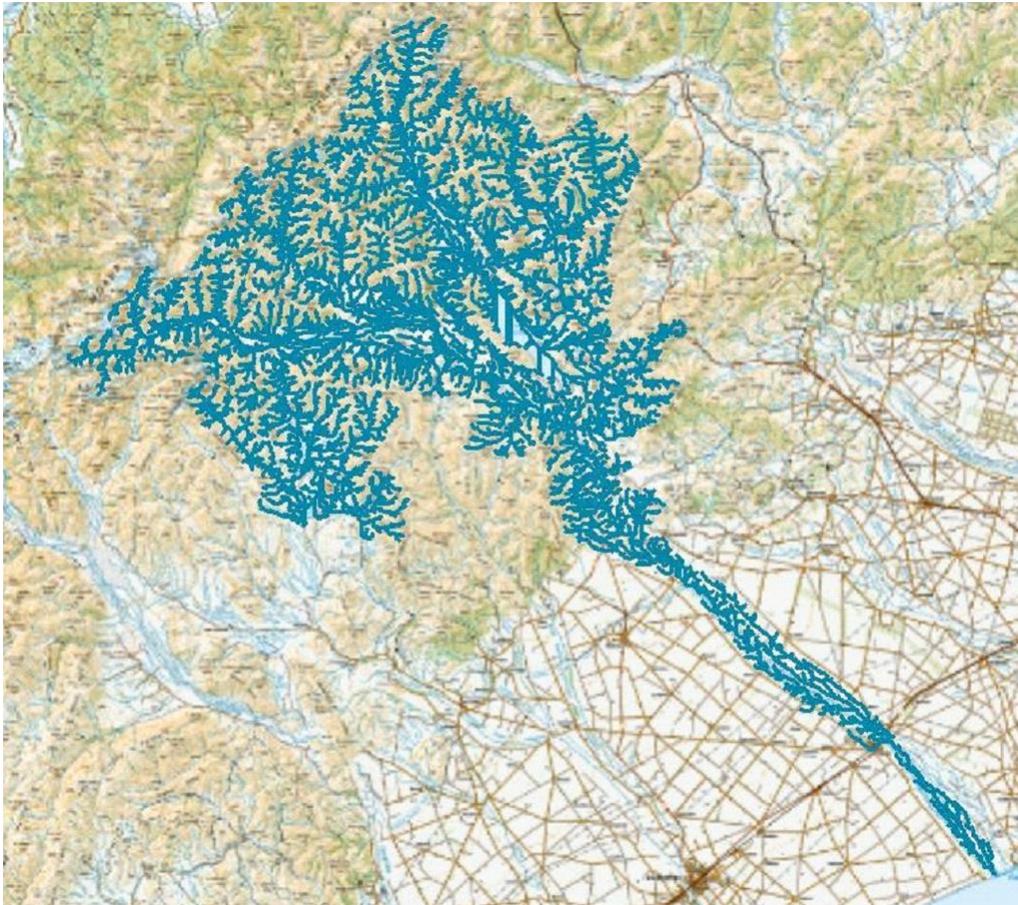
Prepared by David R. Maidment

### Question 1

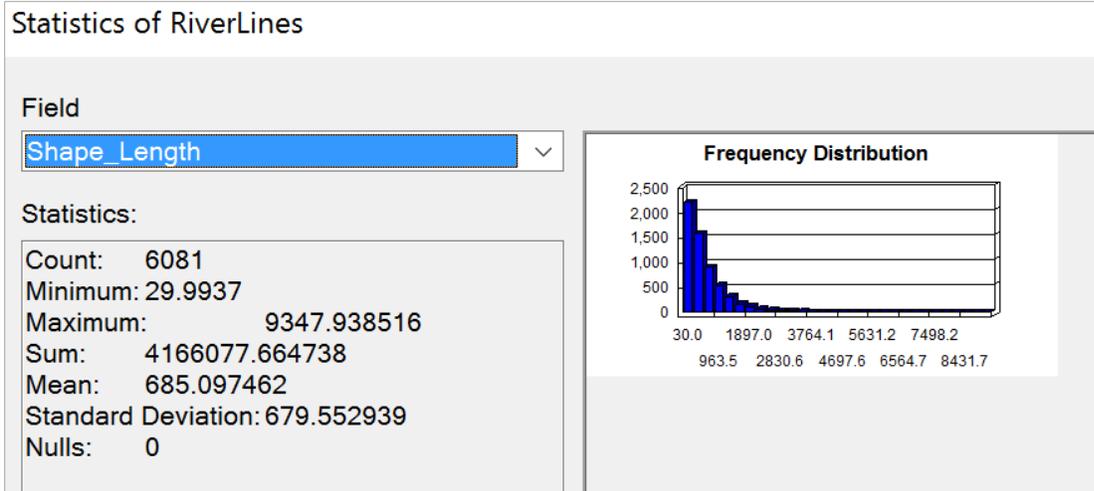
*To be turned in: A map of the riverlines in the Rakaia Catchment. How many RiverLines do we have in the map? What is their total length (Km)? What is their average length (Km)?*

### Solution

Here is a map of the river lines in the Rakaia catchment.



A statistics summary of the Shape\_Length attribute of these lines is presented below, which shows that there are **6081 RiverLines** with total length of 4166077m, or **4166 Km**, and average length of 685m or **0.685 Km**.

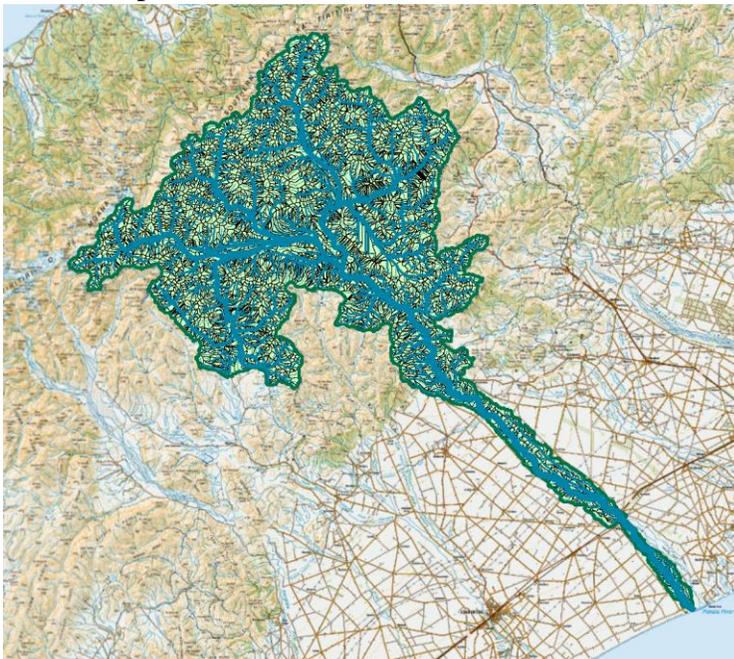


## Question 2

To be turned in: A Basemap of the Rakaia River Catchment. What is the drainage area (Sq Km) of this catchment?

### Solution

A base map of the Rakaia River catchment is shown below.



The total drainage area can be found from the attributes of the **Boundary** feature class shown below. It is 2830786821 m<sup>2</sup> or 2830.8 Km<sup>2</sup>.

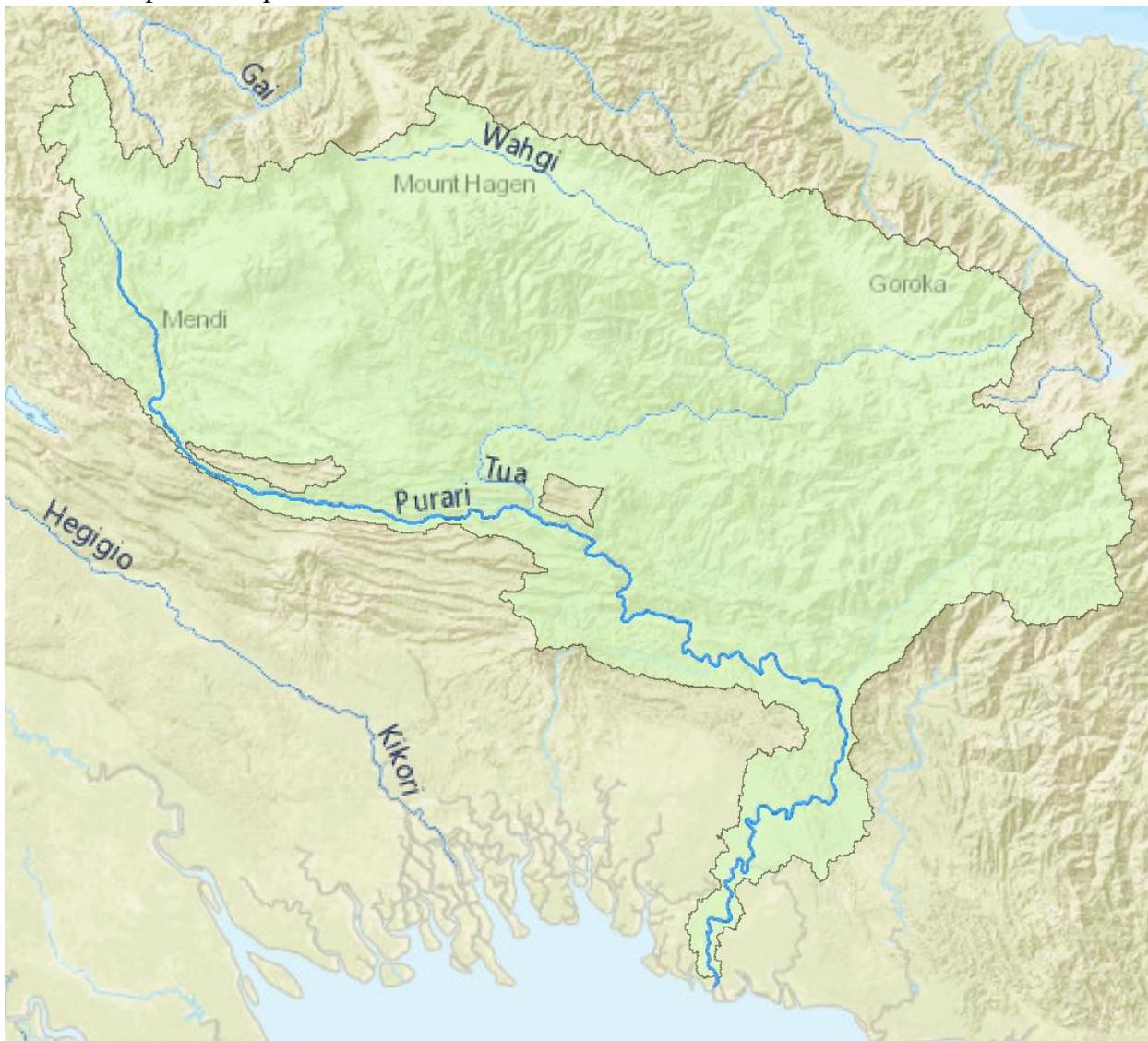
Table			
Boundary			
OBJECTID_1 *	Shape *	Shape_Length	Shape_Area
1	Polygon	680357.119437	2830786821.455044

### Question 3

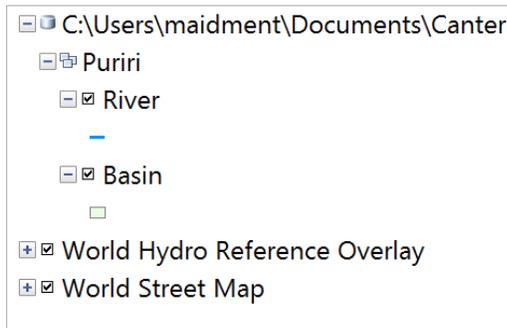
*To be turned in: A basemap of the Purari River basin in Papua-New Guinea.*

### Solution

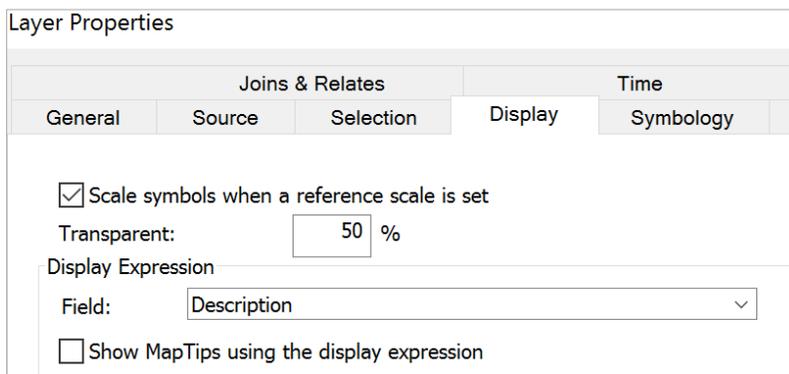
The basemap I developed is shown below.



I have displayed it on top of the World Street map and also overlaid the **World Hydro Reference Overlay** from ArcGIS Online to get a better sense of the river layout in this area.



I used the **Display** property of the Basin feature class to set the Transparency to **50%** so you can see through the basin coverage a bit.



## Question 4

*To be turned in: A basemap of a drainage area of your term project or of another drainage area that interests you. **The Geodatabase containing this basemap should be zipped up and submitted through Learn** along with your pdf document that summarizes your response to the items requested in this exercise.*

## Solution