

## APPENDIX IV-C

### ST. JOHN EROSION MODEL (STJ-EROS) ROUTINE FLOWCHARTS

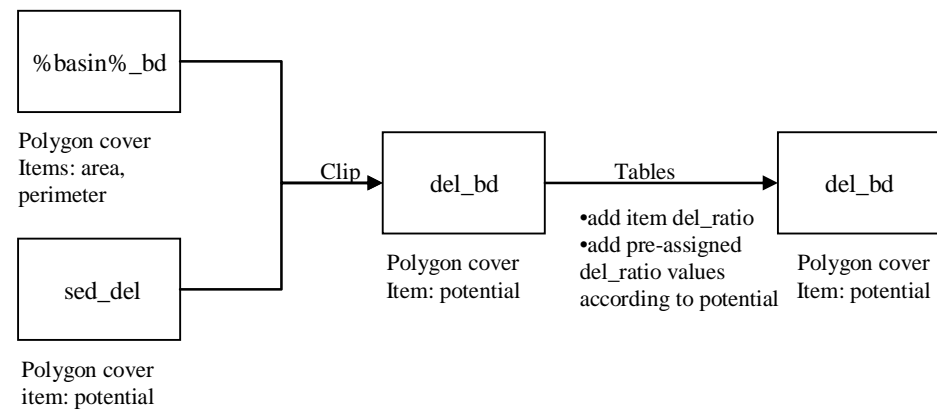
#### Pre-set variables:

- Treethrow: Defines sediment production from treethrow processes along streambanks at a rate of  $0.17 \text{ tons km}^{-1} \text{ yr}^{-1}$
- Bank\_er: Defines sediment production from streambank erosion at a rate of  $10 \text{ kg m}^{-2} \text{ yr}^{-1}$
- Undisturbed: Defines surface erosion of undisturbed hillslopes at a rate of  $0.001 \text{ kg m}^{-2} \text{ yr}^{-1}$
- Abandoned: Defines surface erosion of abandoned roads at  $0.0067 \text{ kg m}^{-2} \text{ yr}^{-1}$
- Ungraded: Defines a linear regression term that defines surface erosion from ungraded roads at  $1.88 \text{ kg m}^{-2} \text{ cm}^{-1} \text{ m}^{-1}$
- Graded: Defines a linear regression term that defines surface erosion from graded roads at  $4.73 \text{ kg m}^{-2} \text{ cm}^{-1} \text{ m}^{-1}$
- Silt\_loss: Ratio of actual sediment production rates to those measured from sediment traps for the silt-size sediment fraction. Value set equal to 9.
- Silt\_u\_rd\_fr, silt\_g\_rd\_fr, silt\_a\_rd\_fr, silt\_se\_fr: The silt-size sediment fraction from ungraded roads (u), graded roads (g), abandoned roads (a), and undisturbed hillslopes (se).
- Un\_sus\_fr, gr\_sus\_fr, ab\_sus\_fr, bank\_sus\_fr, tree\_sus\_fr, se\_sus\_fr: Sediment finer than 2 mm measured or estimated for ungraded roads (un), graded roads (gr), abandoned roads (ab), streambanks (bank), treethrow (tree), and undisturbed hillslopes (se).

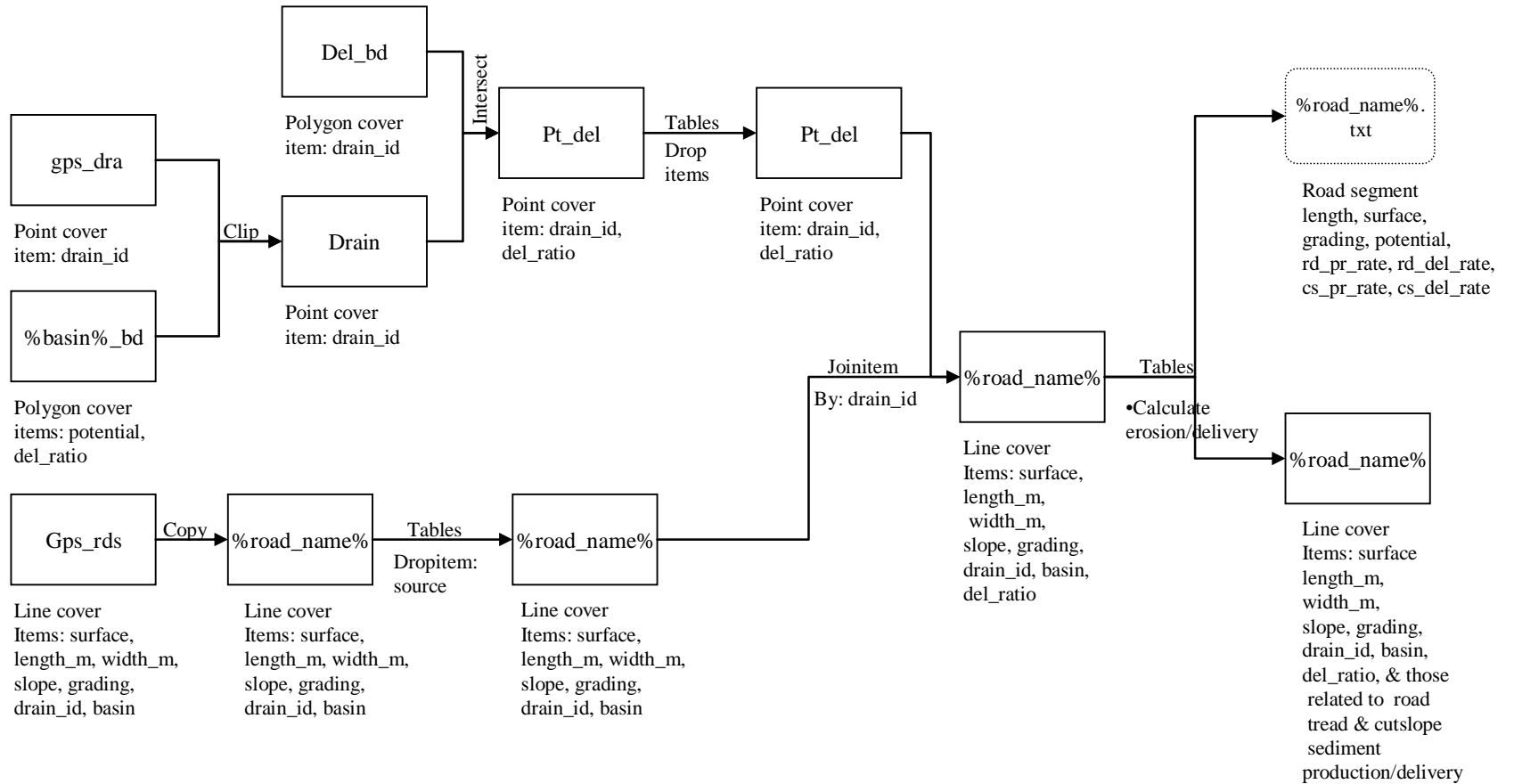
#### User-defined variables:

- Hi\_pot: Defines the sediment delivery ratio for areas with high delivery potential.
- Mod\_pot: Defines the sediment delivery ratio for wetland areas and those defined as having a moderate delivery potential.
- Basin: Defines the basin where the model is to be applied among the following three choices: Fish Bay (fb), Lameshur Bay (lb), and Cinnamon Bay (cb)
- Years: Defines the total time in years for which sediment production estimates are to be calculated.
- Rain\_rate: Defines the total rainfall in  $\text{cm yr}^{-1}$  to be used for road erosion calculations.
- $\text{Rain} = \text{rain\_rate} * \text{years}$
- Road\_name: Defines the name of text file and cover containing the results of the road sediment production and delivery analysis.
- Nat\_name: Defines the name of the text file and cover containing the results of the natural sediment production and delivery analysis.

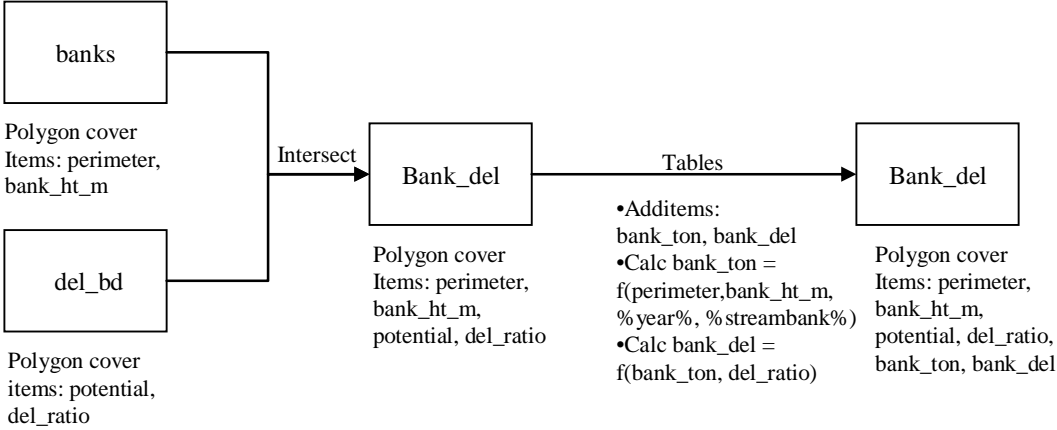
## Routine: del\_potential



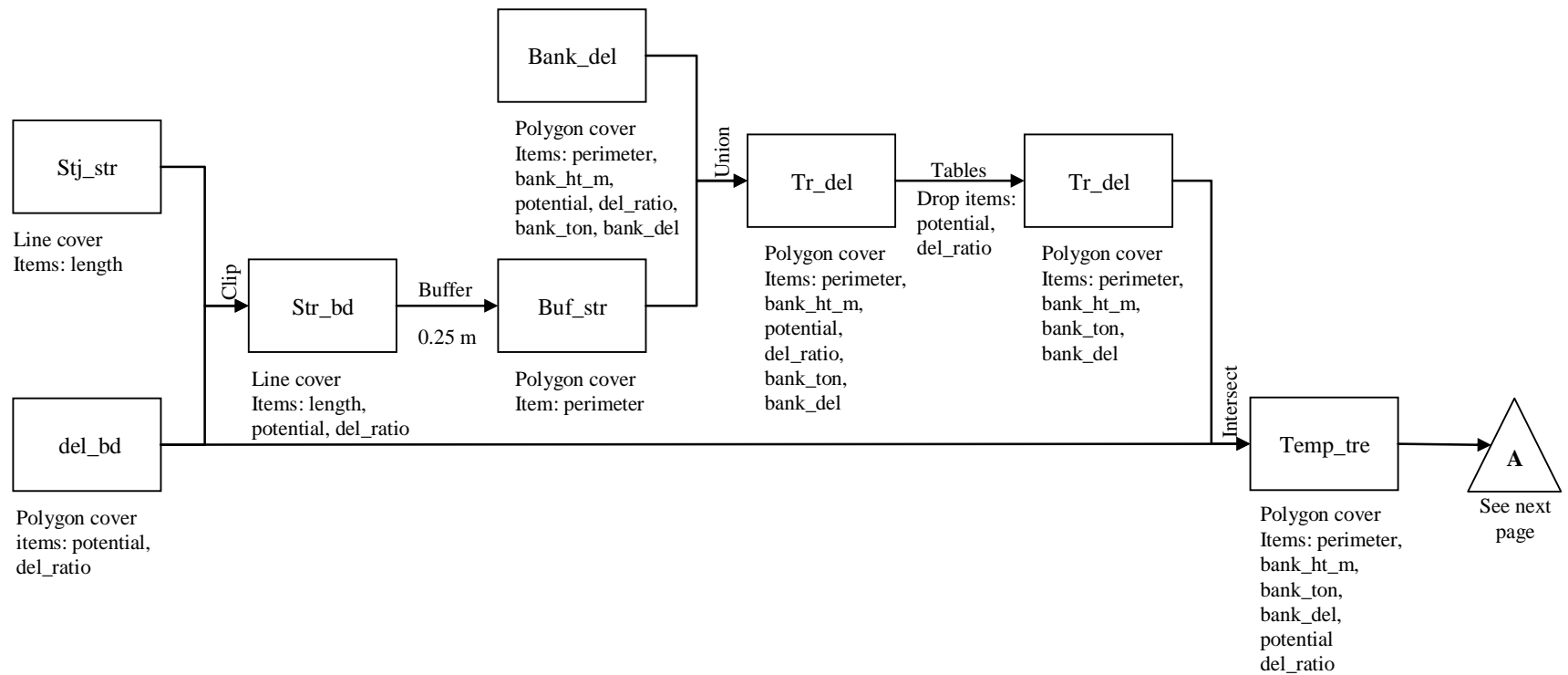
## Routine: rd\_erosion



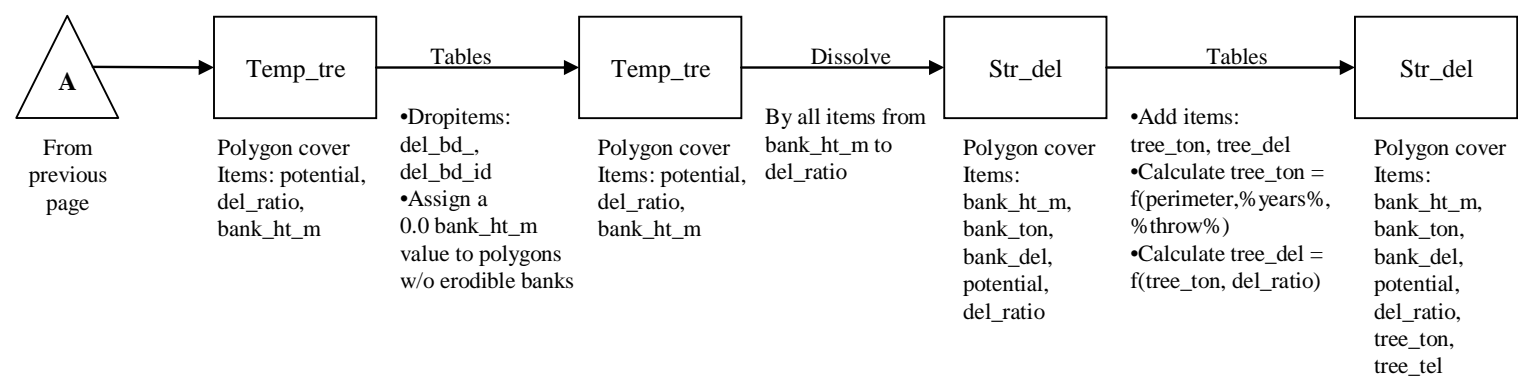
**Routine: streambank**



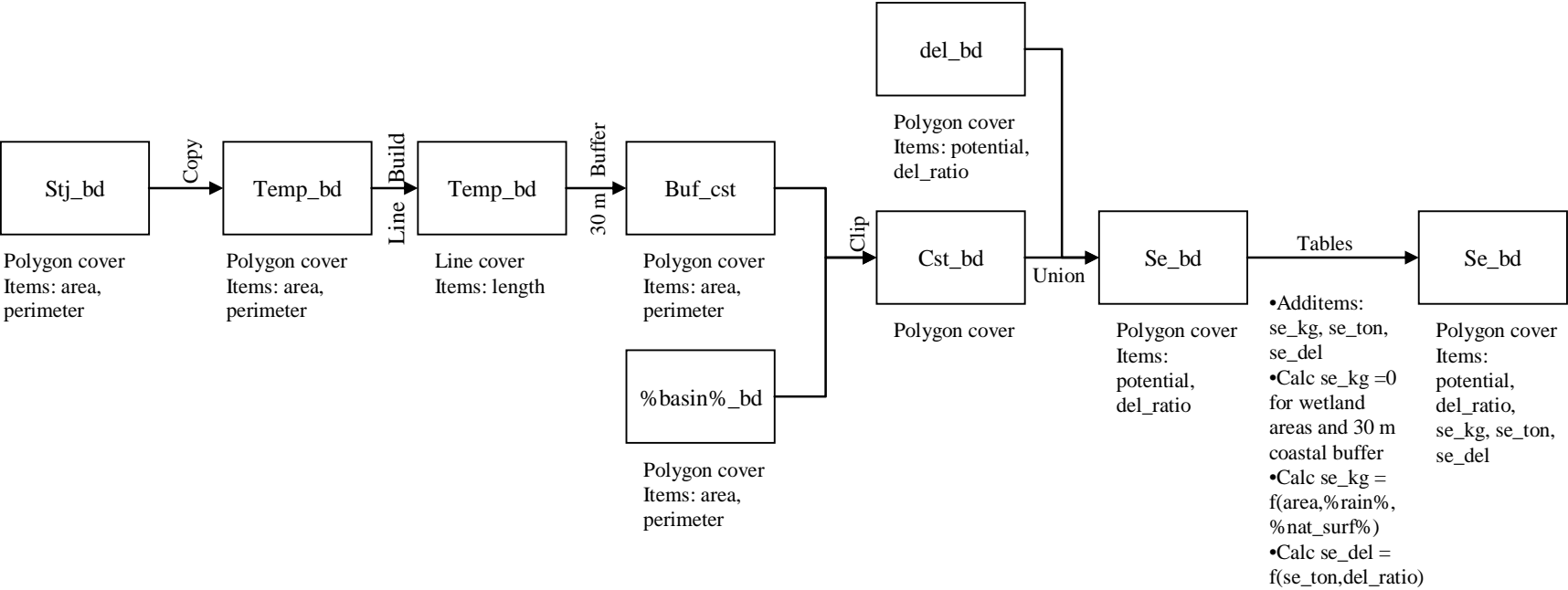
## Routine: stream\_total (Part I)



**Routine: stream\_total (Part II)**



**Routine: surf\_erosion**



## Routine: nat\_erosion

