ภาคผนวก 1

ผ.1 Source Code ของ GIS based Urban drainage management, v1.0 (GURDMAN)

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Forms: frmMainFind_Q_D_2

```
Option Explicit

Const PI = 22 / 7

Dim PipeSize(1 To 15) As Currency

Dim StartRow As Integer

Dim xlApp As New Excel.Application 'Dim xlApp As Object

Private Sub cmdAreaTypeHelp_Click()

    Dim xForm As New frmTblCoTypeShow

        'xForm.Controls(1).Value = txtTC

    xForm.Show

End Sub

Private Sub cmdFindI_Click()

    Dim xForm As New frmFindI

        xForm.Controls(1).Value = txtTC

    xForm.Show
```

```
    Dim cCont As Control

    For Each cCont In xForm.Controls

        If TypeName(cCont) = "Label" Then

            If cCont.Name = "lblReturnPeriod" Then txtReturnPeriod = cCont.Caption
'xForm!retuPeriodLabel

            If cCont.Name = "lblDatasource" Then txtRainDataSource = cCont.Caption
'xForm!DataSourceLabel

            If cCont.Name = "lblReturnI" Then txtI = cCont.Caption    'xForm!txtQt

        End If

    Next cCont

End Sub

Private Sub cmdFindQ_Click()

    '

    txtQw = FindQw(txtQtWtUse, txtPeople, txtWasteWater)

    txtQ = Val(txtQr) + Val(txtQw)

    txtQForComputePipe = Val(txtAccumulateQ) + Val(txtQ)

End Sub
```

```
Private Sub cmdFindQr_Click()
    If txtI.Text = "" Or txtSumCA.Text = "" Then
        MsgBox "กรุณาตรวจสอบ ค่าความเข้มฝน - I และ ค่าสัมประสิทธิ์พื้นที C*'", vbInformation
    Else
        txtQr = FindQr(txtI, txtSumCA)
    End If
End Sub
Private Sub cmdFindTc_Click()
    If Controls("optTc1").Value = True Then
        If txtAreaSlope = "" Then
            MsgBox " กรุณาบันทึกค่า S ", vbInformation, " คำเตือน "
        Else
            txtTC.Text = FindTc(Val(txtAreaLength), txtAreaSlope)
        End If
    ElseIf Controls("optTc2").Value = True Then
        txtAreaSlope.Text = "n/a"
        txtTC.Text = 5 + (Val(txtAreaLength) / 45)
    ElseIf Controls("optTc3").Value = True Then
```

```
        txtAreaSlope.Text = "n/a"
        txtTC.Text = 15 + (Val(txtAreaLength) / 45)
    End If
    txtTC.Text = Format(txtTC.Text, "#.00")
End Sub
Private Sub cmdNewDataEntry_Click()
    Call ClearForNewData
End Sub
Private Sub cmdSaveToSheet_Click()
    Dim AreaNumLine As Integer
    Dim rAreaNo As Integer
    Dim rAreaSize As Integer
    Dim rAreaType As Integer
    Dim rAreaDesc As Integer
    Dim rAreaC As Integer
    Dim rAreaC_A As Integer
    Dim i As Integer
```

```
' - -- --  Zone ----

'StartRow = Val(Me.Caption)

Cells(StartRow, 1) = txtZoneNo.Value

Cells(StartRow, 2) = txtZoneNo.Value + 1

Cells(StartRow, 3) = Chr(64 + txtZoneNo.Value)

Cells(StartRow, 4) = txtAreaLength.Value

Cells(StartRow, 5) = txtAreaSlope.Value

Cells(StartRow, 6) = txtTC.Value

Cells(StartRow, 7) = txtI.Value

rAreaNo = 7

rAreaSize = 38

rAreaType = 23

rAreaDesc = 28

rAreaC = 33

rAreaC_A = 43
```

```
AreaNumLine = StartRow
For i = 0 To 4
    If Controls("TextBox" & rAreaSize).Text = "" Then Exit For
    Cells(StartRow + i, 8) = Controls("TextBox" & rAreaNo).Value
    Cells(StartRow + i, 9) = Controls("TextBox" & rAreaSize).Value
    Cells(StartRow + i, 10) = Controls("TextBox" & rAreaDesc).Value
    'Cells(StartRow + i, 9) = Controls("TextBox" & rAreaC).Value
    AreaNumLine = AreaNumLine + 1
    rAreaNo = rAreaNo + 1
    rAreaSize = rAreaSize + 1
    rAreaType = rAreaType + 1
    rAreaDesc = rAreaDesc + 1
    rAreaC = rAreaC + 1
    rAreaC_A = rAreaC_A + 1
Next i
Cells(StartRow, 11) = txtQr.Value
Cells(StartRow, 12) = txtQw.Value
Cells(StartRow, 13) = txtQ.Value
```

```
    Cells(StartRow, 14) = txtAccumulateQ.Value
    Cells(StartRow, 15) = txtQForComputePipe.Value
    Cells(StartRow, 16) = txtS.Value
    'Cells(StartRow, 18) = txt_n.Value
    'Cells(StartRow, 19) = txtD.Value
    Cells(StartRow, 17) = txtV.Value
    Cells(StartRow, 18) = txtDfinal.Value
    StartRow = AreaNumLine
    txtZoneNo = txtZoneNo.Value + 1
    txtAccumulateQ = txtQForComputePipe
    txtQForComputePipe = 0
End Sub
Sub ClearForNewData()
    Dim rAreaNo As Integer
    Dim rAreaSize As Integer
    Dim rAreaType As Integer
    Dim rAreaDesc As Integer
    Dim rAreaC As Integer
```

```
Dim rAreaC_A As Integer

Dim i As Integer

rAreaNo = 7

rAreaSize = 38

rAreaType = 23

rAreaDesc = 28

rAreaC = 33

rAreaC_A = 43

' - -- --  Zone ----

'StartRow = Val(Me.Caption)

'txtZoneNo = ""

txtAreaLength = ""

txtAreaSlope = "n/a"

txtTC = ""

txtI = ""
```

```
For i = 0 To 4
    'If Controls("TextBox" & rAreaSize).Text = "" Then Exit For
    Controls("TextBox" & rAreaSize) = ""
    Controls("TextBox" & rAreaType) = ""
    Controls("TextBox" & rAreaDesc) = ""
    Controls("TextBox" & rAreaC) = ""
    Controls("TextBox" & rAreaC_A) = ""
    rAreaNo = rAreaNo + 1
    rAreaSize = rAreaSize + 1
    rAreaType = rAreaType + 1
    rAreaDesc = rAreaDesc + 1
    rAreaC = rAreaC + 1
    rAreaC_A = rAreaC_A + 1
Next i
txtSumCA = ""
txtQr = ""
'txtQtWtUse = ""
'txtPeople = ""
```

```
    'txtWasteWater = ""
    txtQw = ""
    txtQ = ""
    'txtS = ""
    'txt_n = ""
    txtD = ""
    txtV = ""
    txtDfinal = ""
End Sub
Private Sub TextBox23_AfterUpdate()
    TextBox28.Text = LookupRange(TextBox23.Text, "CoRunofDatafRange", 1, 2)
    TextBox33.Text = LookupRange(TextBox23.Text, "CoRunofDatafRange", 1, 5)
    TextBox43.Text = Val(TextBox38.Text) * Val(TextBox33.Text)
    txtSumCA.Text = Val(txtSumCA.Text) + Val(TextBox43.Text)
End Sub
Private Sub TextBox24_AfterUpdate()
    TextBox29.Text = LookupRange(TextBox24.Text, "CoRunofDatafRange", 1, 2)
    TextBox34.Text = LookupRange(TextBox24.Text, "CoRunofDatafRange", 1, 5)
```

```
    TextBox44.Text = Val(TextBox39.Text) * Val(TextBox34.Text)

    txtSumCA.Text = Val(txtSumCA.Text) + Val(TextBox44.Text)

End Sub

Private Sub TextBox25_AfterUpdate()

    TextBox30.Text = LookupRange(TextBox25.Text, "CoRunofDatafRange", 1, 2)

    TextBox35.Text = LookupRange(TextBox25.Text, "CoRunofDatafRange", 1, 5)

    TextBox45.Text = Val(TextBox40.Text) * Val(TextBox35.Text)

    txtSumCA.Text = Val(txtSumCA.Text) + Val(TextBox45.Text)

End Sub

Private Sub TextBox26_AfterUpdate()

    TextBox31.Text = LookupRange(TextBox26.Text, "CoRunofDatafRange", 1, 2)

    TextBox36.Text = LookupRange(TextBox26.Text, "CoRunofDatafRange", 1, 5)

    TextBox46.Text = Val(TextBox41.Text) * Val(TextBox36.Text)

    txtSumCA.Text = Val(txtSumCA.Text) + Val(TextBox46.Text)
```

```
End Sub

Private Sub TextBox27_AfterUpdate()

    TextBox32.Text = LookupRange(TextBox27.Text, "CoRunofDatafRange", 1, 2)

    TextBox37.Text = LookupRange(TextBox27.Text, "CoRunofDatafRange", 1, 5)

    TextBox47.Text = Val(TextBox42.Text) * Val(TextBox37.Text)

    txtSumCA.Text = Val(txtSumCA.Text) + Val(TextBox47.Text)

End Sub

Private Sub cmdComputeD_Click()

    Dim Q As Currency

    Dim n As Currency

    Dim S As Currency

    Dim D As Currency

    Q = Val(txtQForComputePipe)

    n = Val(txt_n)

    S = Val(txtS)

    'vD = (((vQ * v_n * (4 ^ (2 / 3))) / (PI * (vS ^ (1 / 2)))) ^ 3) ^ (1 / 8)
```

```
    D = (Q * n * 4 ^ (5 / 3)) / (PI * S ^ (1 / 2))

    D = (D ^ 3) ^ (1 / 8)

    txtD = D

   If D < Val(txtDcfg) Then

       MsgBox " ค่า D น้อยกว่าค่ากำหนด " + txtDcfg.Text + " ดังนั้นจึงเลือกค่ากำหนด ", vbCritical, "คำ
เตือน"

       txtUsedD = txtDcfg

    Else

       txtUsedD = D

    End If

End Sub

Private Sub cmdComputeV_Click()

    Dim V As Currency

    Dim Q As Currency

    Dim n As Currency

    Dim S As Currency

    Dim D As Currency

    Dim newD As Currency
```

```
Dim newV As Currency

Dim i As Integer

Q = Val(txtQForComputePipe)

D = Val(txtUsedD)

n = Val(txt_n)

S = Val(txtS)

V = (4 * Q) / (PI * D ^ 2)

txtV = V

If V < Val(txtVcfg) Then

    MsgBox " ค่า V น้อยกว่าค่ากำหนด " + txtVcfg.Text + " ดังนั้นจึงเลือกค่ากำหนด ", vbCritical, "คำเตือน"

    txtUsedV = txtVcfg

    newV = Val(txtVcfg)

    newD = (newV * n * 4 ^ (2 / 3)) / (S ^ (1 / 2))

    'newD = (newD ^ 3) ^ (1 / 2)

    newD = (newD ^ (3 / 2))

    txtNewD = newD
```

```
    Else
        txtNewD = D
    End If
    '---------------------- คัดเลือกขนาดท่อ -------------------------------
    For i = 1 To 15
        If Val(txtNewD) < PipeSize(i) Then
            txtDfinal = PipeSize(i)
            Exit For
        End If
    Next i
    'MsgBox "ไม่มีขนาดท่อรองรับน้ำปริมาณขนาดนี้", vbCritical
    'txtDfinal = " ---- "
End Sub
Private Sub opt_n1_Click()
    txt_n = opt_n1.Tag
End Sub
Private Sub opt_n2_Click()
    txt_n = opt_n2.Tag
```

```
End Sub

Private Sub txtVcfg_Change()

End Sub

Private Sub UserForm_Initialize()
    Dim i As Integer
    Dim xStr As String
    xStr = ""
    For i = 1 To 15
        PipeSize(i) = 0.3 + (i / 10)
        xStr = xStr & ", " & PipeSize(i)
    Next i
    'lblPipeSize.Caption = xStr
    txt_n = 0.017 'opt_n1.Tag
    StartRow = 5
    txtAccumulateQ.Text = 0
    txtAreaLength.SetFocus
End Sub
```

Forms: frmFindI

```
Private Sub cmdProcess_Click()

    On Error GoTo xErr

    Dim ctlObj As Control

    'Dim xFrame As New Frame1

    Dim selectedYear As Integer

    'CtrlTop = 5

    Dim i As Integer

    Dim YearUse As Integer

    Dim TimeUsage As Double

    Dim retuPeriodLabel As String

    Dim DataSourceLabel As String

    For i = 0 To 5

        If Controls("OptionButton" & i).Value = True Then

        retuPeriodLabel = Controls("OptionButton" & i).Caption

        YearUse = i + 2

       Exit For

      End If
```

```
Next i
'
If OptionButton6.Value = True Then
    TimeUsage = Val(txtHr) / 60
Else
    TimeUsage = txtHr
End If
Dim xRange As String
   If Controls("optSourceData1").Value = True Then
    xRange = "UserData2"
    DataSourceLabel = Controls("optSourceData1").Caption
Else
    xRange = "IDFfromEachStation"
    DataSourceLabel = Controls("optSourceData2").Caption
End If
Dim result As Double
   result = Linterp(Range(xRange), YearUse, TimeUsage)
   txtQt = Format(result, "#.00")
```

```
    lblReturnPeriod.Caption = retuPeriodLabel

    lblDatasource.Caption = DataSourceLabel

    lblReturnI = txtQt

    Exit Sub

xErr:

    If Err = 1004 Then Resume Next

    Exit Sub

End Sub

Private Sub CommandButton1_Click()

    Unload Me

End Sub
```