```
-------------------------------------------------------------------------------
> --------------------------------------
      name:  <unnamed>
       log:  D:\Research\Water Quality Valuation\Phase 1 Analysis\Results\PNAS manuscr
> ipt.log
  log type:  text
 opened on:  21 Apr 2022, 10:34:02

.
. /* Table S4. Model 1, all voting scenarios */
.
. // Estimate vacuous model; needed to compute R^2
. clogit Vote, group(ChoiceID) cluster(RespondentID)

Iteration 0:   log pseudolikelihood = -12236.127

Conditional (fixed-effects) logistic regression   Number of obs   =      35306
                                                  LR chi2(0)      =       0.00
                                                  Prob > chi2     =          .
Log pseudolikelihood = -12236.127                 Pseudo R2       =     0.0000

------------------------------------------------------------------------------
        Vote | Coefficient  Std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
------------------------------------------------------------------------------

. scalar ll_0=e(ll)

.
. // mixed logit in preference space; fixed cost parameter (Reported in Table S4)
. mixlogit Vote Cost, rand(ASC WQ_HUC8 WQ_HUC4 WQ_Medium WQ_Large WQ_HUC4_NL WQ_Medium
> _NL) group(ChoiceID) id(RespondentID) c
> luster(RespondentID) nrep(500)

Iteration 0:   log likelihood = -10704.726  (not concave)
Iteration 1:   log likelihood = -9736.9509  (not concave)
Iteration 2:   log likelihood = -9718.3545  (not concave)
Iteration 3:   log likelihood = -9706.5282
Iteration 4:   log likelihood = -9474.4703
Iteration 5:   log likelihood = -9470.9833
Iteration 6:   log likelihood = -9456.2811
Iteration 7:   log likelihood =  -9456.004
Iteration 8:   log likelihood = -9455.9998
Iteration 9:   log likelihood = -9455.9998

Mixed logit model                                 Number of obs =  35,306
                                                  Wald chi2(8)  = 1014.99
Log likelihood = -9455.9998                       Prob > chi2   =  0.0000

                      (Std. err. adjusted for 2,000 clusters in RespondentID)
------------------------------------------------------------------------------
             |               Robust
        Vote | Coefficient  std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
Mean         |
        Cost |  -.0060353   .0002106   -28.66   0.000     -.006448   -.0056226
         ASC |   .1797801   .0688665     2.61   0.009     .0448042    .3147559
     WQ_HUC8 |  -.7349094   .0764025    -9.62   0.000    -.8846555   -.5851633
     WQ_HUC4 |  -.9902343   .1118483    -8.85   0.000    -1.209453   -.7710157
   WQ_Medium |  -.9091714   .1076724    -8.44   0.000    -1.120206   -.6981373
    WQ_Large |  -.8975505   .1086326    -8.26   0.000    -1.110466   -.6846346
  WQ_HUC4_NL |  -.8172699   .0738877   -11.06   0.000    -.9620872   -.6724526
WQ_Medium_NL |  -.9431314   .0864023   -10.92   0.000    -1.112477   -.7737859
-------------+----------------------------------------------------------------
SD           |
         ASC |   1.576929   .0505117    31.22   0.000     1.477928     1.67593
     WQ_HUC8 |   .9749532    .072449    13.46   0.000     .8329559    1.116951
     WQ_HUC4 |  -.6389862   .2154619    -2.97   0.003    -1.061284   -.2166886
   WQ_Medium |   .0489269   .1717555     0.28   0.776    -.2877078    .3855615
    WQ_Large |   .1556642   .1674184     0.93   0.352    -.1724699    .4837982
  WQ_HUC4_NL |   .6498917   .1775158     3.66   0.000     .3019671    .9978163
WQ_Medium_NL |  -1.251263   .1603059    -7.81   0.000    -1.565456   -.9370688
```

```
------------------------------------------------------------------------------
The sign of the estimated standard deviations is irrelevant: interpret them as
being positive

. est store M1_FixedC_n500

. // Calculate McFadden's R^2
. display 1 - e(ll)/ll_0
.22720648

. scalar R2=1-e(ll)/ll_0

. // Save model results
. outreg2 using "Results\M1_FixedC_n500.rtf", stat(coef se) alpha (0.01, 0.05, 0.10) a
> ddstat(Log-likelihood, e(ll), McFadden'
> s R2, R2) replace
Results\M1_FixedC_n500.rtf
dir : seeout

.
. /* Table 2. Willingness-to-pay for selected water quality improvement scenarios */
. // These results are derived from Model 1
.
. // Calculate WTP for local sub-watershed (HUC8)
. // Increase one BCG level across policy area
. margins, express( -((_b[ASC] + _b[WQ_HUC8]*(HUC8BCG-1)) - (_b[WQ_HUC8]*HUC8BCG))/_b[
> Cost])
warning: option expression() does not contain option predict() or xb().
warning: prediction constant over observations.

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: -((_b[ASC] + _b[WQ_HUC8]*(HUC8BCG-1)) - (_b[WQ_HUC8]*HUC8BCG))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   151.5563   16.39657     9.24   0.000     119.4196     183.693
------------------------------------------------------------------------------

. // Minimum BCG Level 2 ("swimmable")
. margins, express( -((_b[ASC] + _b[WQ_HUC8]*2) - (_b[WQ_HUC8]*HUC8BCG))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: -((_b[ASC] + _b[WQ_HUC8]*2) - (_b[WQ_HUC8]*HUC8BCG))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   236.7313    23.7702     9.96   0.000     190.1426      283.32
------------------------------------------------------------------------------

. // Minimum BCG Level 3 ("biological")
. margins, express( -((_b[ASC] + _b[WQ_HUC8]*min(HUC8BCG, 3)) - (_b[WQ_HUC8]*HUC8BCG))
> /_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: -((_b[ASC] + _b[WQ_HUC8]*min(HUC8BCG, 3)) - (_b[WQ_HUC8]*HUC8BCG))/_b[Cost
> ]
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------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |    119.219   14.08348     8.47   0.000     91.61592    146.8221
------------------------------------------------------------------------------

.
. // Calculate WTP for local watershed (HUC4)
. // Increase one BCG level across policy area
. margins, express( -((_b[ASC] + _b[WQ_HUC4]*(HUC4BCG_base-1) + _b[WQ_HUC8]*(HUC8BCG-1
> )) - (_b[WQ_HUC4]*HUC4BCG_base + _b[WQ_
> HUC8]*HUC8BCG))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: -((_b[ASC] + _b[WQ_HUC4]*(HUC4BCG_base-1) + _b[WQ_HUC8]*(HUC8BCG-1)) - (_b
> [WQ_HUC4]*HUC4BCG_base +
            _b[WQ_HUC8]*HUC8BCG))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   315.6297    12.9988    24.28   0.000     290.1525    341.1069
------------------------------------------------------------------------------

. // Minimum BCG Level 2 ("swimmable")
. margins, express( -((_b[ASC] + _b[WQ_HUC4]*HUC4BCG_scenario1 + _b[WQ_HUC8]*2) - (_b[
> WQ_HUC4]*HUC4BCG_base + _b[WQ_HUC8]*HUC
> 8BCG))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: -((_b[ASC] + _b[WQ_HUC4]*HUC4BCG_scenario1 + _b[WQ_HUC8]*2) - (_b[WQ_HUC4]
> *HUC4BCG_base +
            _b[WQ_HUC8]*HUC8BCG))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   492.4465   20.67645    23.82   0.000     451.9214    532.9716
------------------------------------------------------------------------------

. // Minimum BCG Level 3 ("biological")
. margins, express( -((_b[ASC] + _b[WQ_HUC4]*HUC4BCG_scenario2 + _b[WQ_HUC8]*min(HUC8B
> CG, 3)) - (_b[WQ_HUC4]*HUC4BCG_base + _
> b[WQ_HUC8]*HUC8BCG))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: -((_b[ASC] + _b[WQ_HUC4]*HUC4BCG_scenario2 + _b[WQ_HUC8]*min(HUC8BCG, 3))
> - (_b[WQ_HUC4]*HUC4BCG_base +
            _b[WQ_HUC8]*HUC8BCG))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   217.1722   9.814707    22.13   0.000     197.9357    236.4086
------------------------------------------------------------------------------
```

```
.
. // Calculate WTP for local 3 Watersheds (3 HUC4s)
. // Increase one BCG level across policy area
. margins, express( -((_b[ASC] + _b[WQ_Medium]*(MediumBCG_base-1) + _b[WQ_HUC8]*(HUC8B
> CG-1)) - (_b[WQ_Medium]*MediumBCG_base
> + _b[WQ_HUC8]*HUC8BCG))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: -((_b[ASC] + _b[WQ_Medium]*(MediumBCG_base-1) + _b[WQ_HUC8]*(HUC8BCG-1)) -
>  (_b[WQ_Medium]*MediumBCG_base +
            _b[WQ_HUC8]*HUC8BCG))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   302.1983   11.76898    25.68   0.000     279.1315     325.265
------------------------------------------------------------------------------

. // Minimum BCG Level 2 ("swimmable")
. margins, express( -((_b[ASC] + _b[WQ_Medium]*MediumBCG_scenario1 + _b[WQ_HUC8]*2) -
> (_b[WQ_Medium]*MediumBCG_base + _b[WQ_H
> UC8]*HUC8BCG))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: -((_b[ASC] + _b[WQ_Medium]*MediumBCG_scenario1 + _b[WQ_HUC8]*2) - (_b[WQ_M
> edium]*MediumBCG_base +
            _b[WQ_HUC8]*HUC8BCG))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   470.2806   18.57009    25.32   0.000     433.8839    506.6773
------------------------------------------------------------------------------

. // Minimum BCG Level 3 ("biological")
. margins, express( -((_b[ASC] + _b[WQ_Medium]*MediumBCG_scenario2 + _b[WQ_HUC8]*min(H
> UC8BCG, 3)) - (_b[WQ_Medium]*MediumBCG_
> base + _b[WQ_HUC8]*HUC8BCG))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: -((_b[ASC] + _b[WQ_Medium]*MediumBCG_scenario2 + _b[WQ_HUC8]*min(HUC8BCG,
> 3)) - (_b[WQ_Medium]*MediumBCG_base +
            _b[WQ_HUC8]*HUC8BCG))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   208.9182   9.287816    22.49   0.000     190.7144     227.122
------------------------------------------------------------------------------
```

```
.
. // Calculate WTP for entire Study Region
. // Increase one BCG level across policy area
. margins, express( -((_b[ASC] + _b[WQ_Large]*(2.52) + _b[WQ_HUC8]*(HUC8BCG-1)) - (_b[
> WQ_Large]*3.52 + _b[WQ_HUC8]*HUC8BCG))/
> _b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: -((_b[ASC] + _b[WQ_Large]*(2.52) + _b[WQ_HUC8]*(HUC8BCG-1)) - (_b[WQ_Large
> ]*3.52 +
            _b[WQ_HUC8]*HUC8BCG))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   300.2728   11.69347    25.68   0.000      277.354    323.1916
------------------------------------------------------------------------------

. // Minimum BCG Level 2 ("swimmable")
. margins, express( -((_b[ASC] + _b[WQ_Large]*2 + _b[WQ_HUC8]*2) - (_b[WQ_Large]*3.52
> + _b[WQ_HUC8]*HUC8BCG))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: -((_b[ASC] + _b[WQ_Large]*2 + _b[WQ_HUC8]*2) - (_b[WQ_Large]*3.52 + _b[WQ_
> HUC8]*HUC8BCG))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   462.7804   18.32509    25.25   0.000     426.8639    498.6969
------------------------------------------------------------------------------

. // Minimum BCG Level 3 ("biological")
. margins, express( -((_b[ASC] + _b[WQ_Large]*(3.52-0.59) + _b[WQ_HUC8]*min(HUC8BCG, 3
> )) - (_b[WQ_Large]*3.52 + _b[WQ_HUC8]*H
> UC8BCG))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: -((_b[ASC] + _b[WQ_Large]*(3.52-0.59) + _b[WQ_HUC8]*min(HUC8BCG, 3)) - (_b
> [WQ_Large]*3.52 +
            _b[WQ_HUC8]*HUC8BCG))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   206.9618   9.158159    22.60   0.000     189.0121    224.9114
------------------------------------------------------------------------------
```

```
.
. // Calculate WTP for non-local watershed (HUC4)
. // Increase one BCG level across policy area
. margins, express( -((_b[ASC] + _b[WQ_HUC4_NL]*(HUC4BCG_base_NL-1) ) - (_b[WQ_HUC4_NL
> ]*HUC4BCG_base_NL ))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: -((_b[ASC] + _b[WQ_HUC4_NL]*(HUC4BCG_base_NL-1) ) - (_b[WQ_HUC4_NL]*HUC4BC
> G_base_NL ))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   165.2027   10.73601    15.39   0.000     144.1605    186.2449
------------------------------------------------------------------------------

. // Minimum BCG Level 2 ("swimmable")
. margins, express( -((_b[ASC] + _b[WQ_HUC4_NL]*2 ) - (_b[WQ_HUC4_NL]*HUC4BCG_base_NL
> ))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: -((_b[ASC] + _b[WQ_HUC4_NL]*2 ) - (_b[WQ_HUC4_NL]*HUC4BCG_base_NL ))/_b[Co
> st]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   224.9772   14.50577    15.51   0.000     196.5464     253.408
------------------------------------------------------------------------------

. // Minimum BCG Level 3 ("biological")
. margins, express( -((_b[ASC] + _b[WQ_HUC4_NL]*HUC4BCG_scenario2_NL ) - (_b[WQ_HUC4_N
> L]*HUC4BCG_base_NL ))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: -((_b[ASC] + _b[WQ_HUC4_NL]*HUC4BCG_scenario2_NL ) - (_b[WQ_HUC4_NL]*HUC4B
> CG_base_NL ))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   94.94802   8.988498    10.56   0.000     77.33089    112.5652
------------------------------------------------------------------------------

.
. // Calculate WTP for non-local 3 Watersheds (3 HUC4s)
. // Increase one BCG level across policy area
. margins, express( -((_b[ASC] + _b[WQ_Medium_NL]*(MediumBCG_base_NL-1) ) - (_b[WQ_Med
> ium_NL]*MediumBCG_base_NL ))/_b[Cost])
warning: option expression() does not contain option predict() or xb().
warning: prediction constant over observations.

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: -((_b[ASC] + _b[WQ_Medium_NL]*(MediumBCG_base_NL-1) ) - (_b[WQ_Medium_NL]*
> MediumBCG_base_NL ))/_b[Cost]
```

```
------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   186.0569   12.43379    14.96   0.000     161.6871    210.4267
------------------------------------------------------------------------------

. // Minimum BCG Level 2 ("swimmable")
. margins, express( -((_b[ASC] + _b[WQ_Medium_NL]*2 ) - (_b[WQ_Medium_NL]*MediumBCG_ba
> se_NL ))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: -((_b[ASC] + _b[WQ_Medium_NL]*2 ) - (_b[WQ_Medium_NL]*MediumBCG_base_NL ))
> /_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   260.8864   17.87451    14.60   0.000      225.853    295.9198
------------------------------------------------------------------------------

. // Minimum BCG Level 3 ("biological")
. margins, express( -((_b[ASC] + _b[WQ_Medium_NL]*MediumBCG_scenario2_NL ) - (_b[WQ_Me
> dium_NL]*MediumBCG_base_NL))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: -((_b[ASC] + _b[WQ_Medium_NL]*MediumBCG_scenario2_NL ) - (_b[WQ_Medium_NL]
> *MediumBCG_base_NL))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   112.2394   9.334337    12.02   0.000     93.94448    130.5344
------------------------------------------------------------------------------

.
. /* Some hypothesis tests based on Model 1 */
. // HUC4 v. Medium local, min2 scenario
. margins, express(( -((_b[ASC] + _b[WQ_HUC4]*HUC4BCG_scenario1 + _b[WQ_HUC8]*2) - (_b
> [WQ_HUC4]*HUC4BCG_base + _b[WQ_HUC8]*HU
> C8BCG))/_b[Cost]) - ( -((_b[ASC] + _b[WQ_Medium]*MediumBCG_scenario1 + _b[WQ_HUC8]*2
> ) - (_b[WQ_Medium]*MediumBCG_base + _b[
> WQ_HUC8]*HUC8BCG))/_b[Cost]))
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: ( -((_b[ASC] + _b[WQ_HUC4]*HUC4BCG_scenario1 + _b[WQ_HUC8]*2) - (_b[WQ_HUC
> 4]*HUC4BCG_base +
>            _b[WQ_HUC8]*HUC8BCG))/_b[Cost]) - ( -((_b[ASC] + _b[WQ_Medium]*MediumBCG_s
> cenario1 + _b[WQ_HUC8]*2) -
>            (_b[WQ_Medium]*MediumBCG_base + _b[WQ_HUC8]*HUC8BCG))/_b[Cost])

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   22.16594   20.74741     1.07   0.285    -18.49823    62.83011
------------------------------------------------------------------------------
```

```
. // HUC4 v. Large local, min2 scenario
. margins, express(( -((_b[ASC] + _b[WQ_HUC4]*HUC4BCG_scenario1 + _b[WQ_HUC8]*2) - (_b
> [WQ_HUC4]*HUC4BCG_base + _b[WQ_HUC8]*HU
> C8BCG))/_b[Cost]) - ( -((_b[ASC] + _b[WQ_Large]*2 + _b[WQ_HUC8]*2) - (_b[WQ_Large]*3
> .52 + _b[WQ_HUC8]*HUC8BCG))/_b[Cost]))
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: ( -((_b[ASC] + _b[WQ_HUC4]*HUC4BCG_scenario1 + _b[WQ_HUC8]*2) - (_b[WQ_HUC
> 4]*HUC4BCG_base +
             _b[WQ_HUC8]*HUC8BCG))/_b[Cost]) - ( -((_b[ASC] + _b[WQ_Large]*2 + _b[WQ_HU
> C8]*2) - (_b[WQ_Large]*3.52 +
             _b[WQ_HUC8]*HUC8BCG))/_b[Cost])

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   29.66612   21.59726     1.37   0.170    -12.66372    71.99597
------------------------------------------------------------------------------

. // HUC4 v. Large local, 1-up scenario
. margins, express(( -((_b[ASC] + _b[WQ_HUC4]*(HUC4BCG_base-1) + _b[WQ_HUC8]*(HUC8BCG-
> 1)) - (_b[WQ_HUC4]*HUC4BCG_base + _b[WQ
> _HUC8]*HUC8BCG))/_b[Cost]) - ( -((_b[ASC] + _b[WQ_Large]*(2.52) + _b[WQ_HUC8]*(HUC8B
> CG-1)) - (_b[WQ_Large]*3.52 + _b[WQ_HUC
> 8]*HUC8BCG))/_b[Cost]))
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: ( -((_b[ASC] + _b[WQ_HUC4]*(HUC4BCG_base-1) + _b[WQ_HUC8]*(HUC8BCG-1)) - (
> _b[WQ_HUC4]*HUC4BCG_base +
             _b[WQ_HUC8]*HUC8BCG))/_b[Cost]) - ( -((_b[ASC] + _b[WQ_Large]*(2.52) + _b[
> WQ_HUC8]*(HUC8BCG-1)) -
             (_b[WQ_Large]*3.52 + _b[WQ_HUC8]*HUC8BCG))/_b[Cost])

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   15.35692   14.00291     1.10   0.273    -12.08828    42.80212
------------------------------------------------------------------------------

.
. // HUC4 v. Medium non-local, min2 scenario
. margins, express( (-((_b[ASC] + _b[WQ_HUC4_NL]*2 ) - (_b[WQ_HUC4_NL]*HUC4BCG_base_NL
>  ))/_b[Cost]) - ( -((_b[ASC] + _b[WQ_Me
> dium_NL]*2 ) - (_b[WQ_Medium_NL]*MediumBCG_base_NL ))/_b[Cost]))
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: (-((_b[ASC] + _b[WQ_HUC4_NL]*2 ) - (_b[WQ_HUC4_NL]*HUC4BCG_base_NL ))/_b[C
> ost]) - ( -((_b[ASC] +
             _b[WQ_Medium_NL]*2 ) - (_b[WQ_Medium_NL]*MediumBCG_base_NL ))/_b[Cost])

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |  -35.90925   18.97535    -1.89   0.058    -73.10025    1.281759
------------------------------------------------------------------------------
```

```
. // HUC4 v. Medium non-local, min3 scenario
. margins, express( (-((_b[ASC] + _b[WQ_HUC4_NL]*HUC4BCG_scenario2_NL ) - (_b[WQ_HUC4_
> NL]*HUC4BCG_base_NL ))/_b[Cost]) - ( -(
> (_b[ASC] + _b[WQ_Medium_NL]*MediumBCG_scenario2_NL ) - (_b[WQ_Medium_NL]*MediumBCG_b
> ase_NL ))/_b[Cost]))
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: (-((_b[ASC] + _b[WQ_HUC4_NL]*HUC4BCG_scenario2_NL ) - (_b[WQ_HUC4_NL]*HUC4
> BCG_base_NL ))/_b[Cost]) - (
            -((_b[ASC] + _b[WQ_Medium_NL]*MediumBCG_scenario2_NL ) - (_b[WQ_Medium_NL]
> *MediumBCG_base_NL ))/_b[Cost])

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |  -17.29143   6.648829    -2.60   0.009    -30.32289   -4.259961
------------------------------------------------------------------------------

. // HUC4 v. Medium non-local, 1-up scenario
. margins, express(( -((_b[ASC] + _b[WQ_HUC4_NL]*(HUC4BCG_base_NL-1) ) - (_b[WQ_HUC4_N
> L]*HUC4BCG_base_NL ))/_b[Cost]) - ( -((
> _b[ASC] + _b[WQ_Medium_NL]*(MediumBCG_base_NL-1) ) - (_b[WQ_Medium_NL]*MediumBCG_bas
> e_NL ))/_b[Cost]))
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 35,306
Model VCE: Robust

Expression: ( -((_b[ASC] + _b[WQ_HUC4_NL]*(HUC4BCG_base_NL-1) ) - (_b[WQ_HUC4_NL]*HUC4
> BCG_base_NL ))/_b[Cost]) - (
            -((_b[ASC] + _b[WQ_Medium_NL]*(MediumBCG_base_NL-1) ) - (_b[WQ_Medium_NL]*
> MediumBCG_base_NL ))/_b[Cost])

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |  -20.85418   12.93611    -1.61   0.107    -46.20848    4.500126
------------------------------------------------------------------------------


.
. /* Some robustness checks related to Model 1 */
.
. // Robustness check: conditional logit
. clogit Vote ASC WQ_HUC8 WQ_HUC4 WQ_Medium WQ_Large WQ_HUC4_NL WQ_Medium_NL Cost, gro
> up(ChoiceID) cluster(RespondentID)

Iteration 0:   log pseudolikelihood = -10936.324
Iteration 1:   log pseudolikelihood = -10767.626
Iteration 2:   log pseudolikelihood = -10766.646
Iteration 3:   log pseudolikelihood = -10766.646

Conditional (fixed-effects) logistic regression        Number of obs =  35,306
                                                       Wald chi2(8)  = 1177.01
                                                       Prob > chi2   =  0.0000
Log pseudolikelihood = -10766.646                      Pseudo R2     =  0.1201
```

```
                    (Std. err. adjusted for 2,000 clusters in RespondentID)
------------------------------------------------------------------------------
             |               Robust
        Vote | Coefficient  std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
         ASC |   .1822277   .0485354     3.75   0.000        .0871    .2773554
     WQ_HUC8 |  -.4112211   .0545344    -7.54   0.000    -.5181066   -.3043356
     WQ_HUC4 |  -.5375011   .0754848    -7.12   0.000    -.6854485   -.3895537
   WQ_Medium |  -.5050409   .0783023    -6.45   0.000    -.6585105   -.3515713
    WQ_Large |  -.5158397   .0796125    -6.48   0.000    -.6718774   -.3598021
  WQ_HUC4_NL |  -.4462138   .0511617    -8.72   0.000    -.5464889   -.3459388
WQ_Medium_NL |  -.5146087   .0550467    -9.35   0.000    -.6224982   -.4067191
        Cost |  -.0037207   .0001247   -29.84   0.000     -.003965   -.0034763
------------------------------------------------------------------------------

. est store M1_clogit

. // Calculate McFadden's R^2
. display 1 - e(ll)/ll_0
.12009365

. scalar R2=1-e(ll)/ll_0

.
. // Robustness check: mixed logit with sampling weights
. mixlogit Vote Cost [pweight=WEIGHT], rand(ASC WQ_HUC8 WQ_HUC4 WQ_Medium WQ_Large WQ_
> HUC4_NL WQ_Medium_NL) group(ChoiceID) i
> d(RespondentID) cluster(RespondentID) nrep(500)

Iteration 0:   log likelihood = -10931.281  (not concave)
Iteration 1:   log likelihood = -9995.2761  (not concave)
Iteration 2:   log likelihood = -9990.8511
Iteration 3:   log likelihood =      -9841
Iteration 4:   log likelihood = -9832.5108
Iteration 5:   log likelihood = -9831.4419
Iteration 6:   log likelihood =   -9831.44
Iteration 7:   log likelihood =   -9831.44

Mixed logit model                                       Number of obs = 35,306
                                                        Wald chi2(8)  = 368.91
Log likelihood = -9831.44                               Prob > chi2   = 0.0000

                    (Std. err. adjusted for 2,000 clusters in RespondentID)
------------------------------------------------------------------------------
             |               Robust
        Vote | Coefficient  std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
Mean         |
        Cost |  -.0051706   .0002941   -17.58   0.000     -.005747   -.0045943
         ASC |   .0937985   .0925407     1.01   0.311     -.087578    .2751749
     WQ_HUC8 |  -.6537554   .1182073    -5.53   0.000    -.8854375   -.4220733
     WQ_HUC4 |  -.8608077    .194276    -4.43   0.000    -1.241582   -.4800339
   WQ_Medium |  -.7591616   .1664974    -4.56   0.000    -1.085491   -.4328327
    WQ_Large |  -.7282138   .1773101    -4.11   0.000    -1.075735   -.3806924
  WQ_HUC4_NL |  -.6849695   .1093099    -6.27   0.000    -.8992129    -.470726
WQ_Medium_NL |  -.8024071   .1079578    -7.43   0.000    -1.014001   -.5908137
-------------+----------------------------------------------------------------
SD           |
         ASC |   1.461215   .0711841    20.53   0.000     1.321697    1.600733
     WQ_HUC8 |   .8900141   .1030686     8.64   0.000     .6880033    1.092025
     WQ_HUC4 |  -.8101685   .3052435    -2.65   0.008    -1.408435   -.2119022
   WQ_Medium |  -.0555096   .1390024    -0.40   0.690    -.3279492      .21693
    WQ_Large |   .4710259   .2433527     1.94   0.053    -.0059367    .9479884
  WQ_HUC4_NL |   .6934716   .3003281     2.31   0.021     .1048395    1.282104
WQ_Medium_NL |   .9076452   .2212797     4.10   0.000      .473945    1.341346
------------------------------------------------------------------------------
The sign of the estimated standard deviations is irrelevant: interpret them as
being positive
```

```
. est store M1_FixedC_n500_wt

. // Calculate McFadden's R^2
. display 1 - e(ll)/ll_0
.19652355

. scalar R2=1-e(ll)/ll_0

.
. // Robustness check: mixed logit with correlated parameters
. mixlogit Vote Cost, rand(ASC WQ_HUC8 WQ_HUC4 WQ_Medium WQ_Large WQ_HUC4_NL WQ_Medium
> _NL) group(ChoiceID) id(RespondentID) c
> luster(RespondentID) nrep(500) corr

Iteration 0:   log likelihood = -10599.387  (not concave)
Iteration 1:   log likelihood = -9962.5166  (not concave)
Iteration 2:   log likelihood = -9794.4772  (not concave)
Iteration 3:   log likelihood = -9776.9014  (not concave)
Iteration 4:   log likelihood =  -9667.259  (not concave)
Iteration 5:   log likelihood = -9482.7456  (not concave)
Iteration 6:   log likelihood = -9457.2103  (not concave)
Iteration 7:   log likelihood = -9410.0384  (not concave)
Iteration 8:   log likelihood = -9406.2047  (not concave)
Iteration 9:   log likelihood = -9393.4493  (not concave)
Iteration 10:  log likelihood = -9386.9117  (not concave)
Iteration 11:  log likelihood = -9378.5311  (not concave)
Iteration 12:  log likelihood = -9376.4895  (not concave)
Iteration 13:  log likelihood =    -9375.7  (not concave)
Iteration 14:  log likelihood = -9375.3985  (not concave)
Iteration 15:  log likelihood = -9375.2061  (not concave)
Iteration 16:  log likelihood =  -9375.041  (not concave)
Iteration 17:  log likelihood = -9374.8691  (not concave)
Iteration 18:  log likelihood = -9374.7656  (not concave)
Iteration 19:  log likelihood = -9374.6401  (not concave)
Iteration 20:  log likelihood = -9374.5113  (not concave)
Iteration 21:  log likelihood = -9374.2028
Iteration 22:  log likelihood = -9373.9222
Iteration 23:  log likelihood = -9373.8521
Iteration 24:  log likelihood = -9373.8513

Mixed logit model                                 Number of obs = 35,306
                                                  Wald chi2(8)  = 915.78
Log likelihood = -9373.8513                       Prob > chi2   = 0.0000

                        (Std. err. adjusted for 2,000 clusters in RespondentID)
------------------------------------------------------------------------------
             |               Robust
        Vote | Coefficient  std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
        Cost |  -.0063983   .0002303   -27.78   0.000    -.0068497   -.0059468
         ASC |   .2008283   .0702428     2.86   0.004     .063155    .3385016
     WQ_HUC8 |  -.7260902   .0774985    -9.37   0.000    -.8779844    -.574196
     WQ_HUC4 |   -1.09095   .1171351    -9.31   0.000    -1.320531   -.8613696
   WQ_Medium |  -1.083457   .1171974    -9.24   0.000     -1.31316   -.8537541
    WQ_Large |  -1.028278   .1176839    -8.74   0.000    -1.258934   -.7976215
  WQ_HUC4_NL |  -.8779361   .0845292   -10.39   0.000     -1.04361   -.7122618
WQ_Medium_NL |  -1.014247   .0986459   -10.28   0.000    -1.207589   -.8209043
-------------+----------------------------------------------------------------
        /l11 |   1.727811   .1036994    16.66   0.000     1.524564    1.931058
        /l21 |  -.1559085   .1711191    -0.91   0.362    -.4912957    .1794787
        /l31 |   .6348657    .194066     3.27   0.001     .2545033    1.015228
        /l41 |    .716979   .2122438     3.38   0.001     .3009887    1.132969
        /l51 |   .8291768   .2036811     4.07   0.000     .4299691    1.228384
        /l61 |    .445484   .1574581     2.83   0.005     .1368718    .7540961
        /l71 |    .658721   .1792672     3.67   0.000     .3073638    1.010078
        /l22 |   .5445155   .1669925     3.26   0.001     .2172162    .8718147
        /l32 |   1.041239   .2005221     5.19   0.000     .6482227    1.434255
        /l42 |    1.04107    .236232     4.41   0.000     .5780637    1.504076
        /l52 |   .8082515   .2247014     3.60   0.000     .3678449    1.248658
        /l62 |   .7666699   .1365666     5.61   0.000     .4990043    1.034335
        /l72 |   1.164769   .1839352     6.33   0.000     .8042622    1.525275
        /l33 |  -.1082779   .3397983    -0.32   0.750    -.7742704    .5577145
```

```
        /l43 |  -.2351145   .3510179    -0.67   0.503     -.923097     .452868
        /l53 |  -.1511232   .2740829    -0.55   0.581    -.6883158    .3860694
        /l63 |   .4964937   .2909726     1.71   0.088    -.0738021     1.06679
        /l73 |   .3298456   .3048211     1.08   0.279    -.2675927     .927284
        /l44 |   .7653579   .1688767     4.53   0.000     .4343657     1.09635
        /l54 |   .9502184   .1592353     5.97   0.000     .6381229    1.262314
        /l64 |   .9132791   .2667936     3.42   0.001     .3903733    1.436185
        /l74 |   .7943438    .238245     3.33   0.001     .3273923    1.261295
        /l55 |  -.0579045   .2172464    -0.27   0.790    -.4836996    .3678905
        /l65 |   .2369386   .3042647     0.78   0.436    -.3594092    .8332863
        /l75 |  -.3230222   .3685704    -0.88   0.381    -1.045407    .3993625
        /l66 |   .8859377   .2305792     3.84   0.000     .4340107    1.337865
        /l76 |   1.438197   .2696152     5.33   0.000     .9097607    1.966633
        /l77 |  -.7716147   .2831462    -2.73   0.006    -1.326571   -.2166583
------------------------------------------------------------------------------

. est store M1_FixedC_n500_corr

. // Calculate McFadden's R^2
. display 1 - e(ll)/ll_0
.23392008

. scalar R2=1-e(ll)/ll_0

.
.
. /* Table S5. Model 2, local and non-local watershed voting scenarios */
.
. // Estimate vacuous model; needed to compute R^2
. clogit Vote if (Spatial_Unit==1 | Spatial_Unit==4), group(ChoiceID) cluster(Responde
> ntID)

Iteration 0:   log pseudolikelihood = -4870.7452

Conditional (fixed-effects) logistic regression   Number of obs   =      14054
                                                  LR chi2(0)      =       0.00
                                                  Prob > chi2     =          .
Log pseudolikelihood = -4870.7452                 Pseudo R2       =     0.0000

------------------------------------------------------------------------------
        Vote | Coefficient  Std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
------------------------------------------------------------------------------

. scalar ll_0=e(ll)

.
. // mixed logit in preference space; fixed cost parameter
. mixlogit Vote ASC_PercentInstate ASC_PercentInstate_NL Cost if (Spatial_Unit==1 | Sp
> atial_Unit==4), rand(ASC WQ_HUC8 WQ_HUC
> 4 WQ_HUC4_NL) group(ChoiceID) id(RespondentID) cluster(RespondentID) nrep(500)

Iteration 0:   log likelihood = -4225.7812  (not concave)
Iteration 1:   log likelihood = -3996.0948
Iteration 2:   log likelihood = -3930.0589  (not concave)
Iteration 3:   log likelihood = -3926.5024
Iteration 4:   log likelihood = -3924.0681
Iteration 5:   log likelihood = -3924.0014
Iteration 6:   log likelihood = -3923.9487
Iteration 7:   log likelihood = -3923.9483
Iteration 8:   log likelihood = -3923.9483

Mixed logit model                                     Number of obs = 14,054
                                                      Wald chi2(7)  = 416.81
Log likelihood = -3923.9483                           Prob > chi2   = 0.0000
```

```
                                (Std. err. adjusted for 1,730 clusters in RespondentID
> )
------------------------------------------------------------------------------------
> -
                     |               Robust
                Vote | Coefficient  std. err.      z    P>|z|     [95% conf. interval
> ]
---------------------+--------------------------------------------------------------
> -
Mean                 |
   ASC_PercentInstate |   .0068238   .0020029     3.41   0.001     .0028983    .010749
> 3
ASC_PercentInstate_NL |     .01751   .0043957     3.98   0.000     .0088945    .026125
> 5
                Cost |  -.0062719   .0003376   -18.58   0.000    -.0069335   -.005610
> 3
                 ASC |  -.0491401   .1111362    -0.44   0.658    -.2669632    .168682
> 9
             WQ_HUC8 |  -.6410609   .1382956    -4.64   0.000    -.9121152   -.370006
> 5
             WQ_HUC4 |  -.9589298   .1817611    -5.28   0.000    -1.315175   -.602684
> 5
          WQ_HUC4_NL |  -1.044005   .1127997    -9.26   0.000    -1.265088   -.822921
> 7
---------------------+--------------------------------------------------------------
> -
SD                   |
                 ASC |   1.572034   .0828242    18.98   0.000     1.409702    1.73436
> 7
             WQ_HUC8 |   .6220599    .270182     2.30   0.021     .0925129    1.15160
> 7
             WQ_HUC4 |  -.8320765   .3509254    -2.37   0.018    -1.519878   -.144275
> 3
          WQ_HUC4_NL |    1.08249   .1736986     6.23   0.000     .7420469    1.42293
> 3
------------------------------------------------------------------------------------
> -
The sign of the estimated standard deviations is irrelevant: interpret them as
being positive

. est store M2_FixedC_n500

. // Calculate McFadden's R^2
. display 1 - e(ll)/ll_0
.19438442

. scalar R2=1-e(ll)/ll_0

. // Save model results
. outreg2 using "Results\M2_FixedC_n500.rtf", stat(coef se) alpha (0.01, 0.05, 0.10) a
> ddstat(Log-likelihood, e(ll), McFadden'
> s R2, R2) replace
Results\M2_FixedC_n500.rtf
dir : seeout

.
.
. /* Table 3. Willingness-to-pay for water quality improvement scenarios based on perc
> entage of impacted area located in-stat
> e */
```

```
. // These results are derived from Model 2
.
. // Local policy: impact area 100% in-state
. margins, express( -((_b[ASC] + _b[ASC_PercentInstate]*100 + _b[WQ_HUC4]*(HUC4BCG_bas
> e-1) + _b[WQ_HUC8]*(HUC8BCG-1)) - (_b[W
> Q_HUC4]*HUC4BCG_base + _b[WQ_HUC8]*HUC8BCG))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 14,054
Model VCE: Robust

Expression: -((_b[ASC] + _b[ASC_PercentInstate]*100 + _b[WQ_HUC4]*(HUC4BCG_base-1) + _
> b[WQ_HUC8]*(HUC8BCG-1)) -
            (_b[WQ_HUC4]*HUC4BCG_base + _b[WQ_HUC8]*HUC8BCG))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   356.0704   18.49445    19.25   0.000     319.8219    392.3188
------------------------------------------------------------------------------

. margins, express( -((_b[ASC] + _b[ASC_PercentInstate]*100 + _b[WQ_HUC4]*HUC4BCG_scen
> ario1 + _b[WQ_HUC8]*2) - (_b[WQ_HUC4]*H
> UC4BCG_base + _b[WQ_HUC8]*HUC8BCG))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 14,054
Model VCE: Robust

Expression: -((_b[ASC] + _b[ASC_PercentInstate]*100 + _b[WQ_HUC4]*HUC4BCG_scenario1 +
> _b[WQ_HUC8]*2) -
            (_b[WQ_HUC4]*HUC4BCG_base + _b[WQ_HUC8]*HUC8BCG))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   513.4416   22.98471    22.34   0.000     468.3923    558.4908
------------------------------------------------------------------------------

. margins, express( -((_b[ASC] + _b[ASC_PercentInstate]*100 + _b[WQ_HUC4]*HUC4BCG_scen
> ario2 + _b[WQ_HUC8]*min(HUC8BCG, 3)) -
> (_b[WQ_HUC4]*HUC4BCG_base + _b[WQ_HUC8]*HUC8BCG))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 14,054
Model VCE: Robust

Expression: -((_b[ASC] + _b[ASC_PercentInstate]*100 + _b[WQ_HUC4]*HUC4BCG_scenario2 +
> _b[WQ_HUC8]*min(HUC8BCG, 3)) -
            (_b[WQ_HUC4]*HUC4BCG_base + _b[WQ_HUC8]*HUC8BCG))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   268.3573   19.63619    13.67   0.000     229.8711    306.8436
------------------------------------------------------------------------------
```

```
.
. // Local policy: impact area 25% in-state
. margins, express( -((_b[ASC] + _b[ASC_PercentInstate]*25 + _b[WQ_HUC4]*(HUC4BCG_base
> -1) + _b[WQ_HUC8]*(HUC8BCG-1)) - (_b[WQ
> _HUC4]*HUC4BCG_base + _b[WQ_HUC8]*HUC8BCG))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 14,054
Model VCE: Robust

Expression: -((_b[ASC] + _b[ASC_PercentInstate]*25 + _b[WQ_HUC4]*(HUC4BCG_base-1) + _b
> [WQ_HUC8]*(HUC8BCG-1)) -
            (_b[WQ_HUC4]*HUC4BCG_base + _b[WQ_HUC8]*HUC8BCG))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   274.4702   17.20482    15.95   0.000     240.7494    308.1911
------------------------------------------------------------------------------

. margins, express( -((_b[ASC] + _b[ASC_PercentInstate]*25 + _b[WQ_HUC4]*HUC4BCG_scena
> rio1 + _b[WQ_HUC8]*2) - (_b[WQ_HUC4]*HU
> C4BCG_base + _b[WQ_HUC8]*HUC8BCG))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 14,054
Model VCE: Robust

Expression: -((_b[ASC] + _b[ASC_PercentInstate]*25 + _b[WQ_HUC4]*HUC4BCG_scenario1 + _
> b[WQ_HUC8]*2) -
            (_b[WQ_HUC4]*HUC4BCG_base + _b[WQ_HUC8]*HUC8BCG))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   431.8414   26.93828    16.03   0.000     379.0433    484.6395
------------------------------------------------------------------------------

. margins, express( -((_b[ASC] + _b[ASC_PercentInstate]*25 + _b[WQ_HUC4]*HUC4BCG_scena
> rio2 + _b[WQ_HUC8]*min(HUC8BCG, 3)) - (
> _b[WQ_HUC4]*HUC4BCG_base + _b[WQ_HUC8]*HUC8BCG))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 14,054
Model VCE: Robust

Expression: -((_b[ASC] + _b[ASC_PercentInstate]*25 + _b[WQ_HUC4]*HUC4BCG_scenario2 + _
> b[WQ_HUC8]*min(HUC8BCG, 3)) -
            (_b[WQ_HUC4]*HUC4BCG_base + _b[WQ_HUC8]*HUC8BCG))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   186.7572   13.26727    14.08   0.000     160.7538    212.7605
------------------------------------------------------------------------------

.
```

```
. // Non-local policy: impact area 25% in-state
. margins, express( -((_b[ASC] + _b[ASC_PercentInstate_NL]*25+ _b[WQ_HUC4_NL]*(HUC4BCG
> _base_NL-1) ) - (_b[WQ_HUC4_NL]*HUC4BCG
> _base_NL ))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 14,054
Model VCE: Robust

Expression: -((_b[ASC] + _b[ASC_PercentInstate_NL]*25+ _b[WQ_HUC4_NL]*(HUC4BCG_base_NL
> -1) ) -
            (_b[WQ_HUC4_NL]*HUC4BCG_base_NL ))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   228.4186   19.06591    11.98   0.000     191.0501    265.7871
------------------------------------------------------------------------------

. margins, express( -((_b[ASC] + _b[ASC_PercentInstate_NL]*25 + _b[WQ_HUC4_NL]*2 ) - (
> _b[WQ_HUC4_NL]*HUC4BCG_base_NL ))/_b[Co
> st])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 14,054
Model VCE: Robust

Expression: -((_b[ASC] + _b[ASC_PercentInstate_NL]*25 + _b[WQ_HUC4_NL]*2 ) - (_b[WQ_HU
> C4_NL]*HUC4BCG_base_NL ))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   301.4343   22.08717    13.65   0.000     258.1443    344.7244
------------------------------------------------------------------------------

. margins, express( -((_b[ASC] + _b[ASC_PercentInstate_NL]*25+ _b[WQ_HUC4_NL]*HUC4BCG_
> scenario2_NL ) - (_b[WQ_HUC4_NL]*HUC4BC
> G_base_NL ))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 14,054
Model VCE: Robust

Expression: -((_b[ASC] + _b[ASC_PercentInstate_NL]*25+ _b[WQ_HUC4_NL]*HUC4BCG_scenario
> 2_NL ) -
            (_b[WQ_HUC4_NL]*HUC4BCG_base_NL ))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   141.7202   19.32267     7.33   0.000     103.8485     179.592
------------------------------------------------------------------------------

.
. // Non-local policy: impact area 0% in-state
. margins, express( -((_b[ASC]  + _b[ASC_PercentInstate_NL]*0 + _b[WQ_HUC4_NL]*(HUC4BC
> G_base_NL-1) ) - (_b[WQ_HUC4_NL]*HUC4BC
> G_base_NL ))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 14,054
Model VCE: Robust

Expression: -((_b[ASC] + _b[ASC_PercentInstate_NL]*0 + _b[WQ_HUC4_NL]*(HUC4BCG_base_NL
> -1) ) -
            (_b[WQ_HUC4_NL]*HUC4BCG_base_NL ))/_b[Cost]
```

```
------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   158.6229   11.83085    13.41   0.000     135.4349     181.811
------------------------------------------------------------------------------

. margins, express( -((_b[ASC]  + _b[ASC_PercentInstate_NL]*0 + _b[WQ_HUC4_NL]*2 ) - (
> _b[WQ_HUC4_NL]*HUC4BCG_base_NL ))/_b[Co
> st])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 14,054
Model VCE: Robust

Expression: -((_b[ASC] + _b[ASC_PercentInstate_NL]*0 + _b[WQ_HUC4_NL]*2 ) - (_b[WQ_HUC
> 4_NL]*HUC4BCG_base_NL ))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   231.6387    16.1485    14.34   0.000     199.9882    263.2891
------------------------------------------------------------------------------

. margins, express( -((_b[ASC]  + _b[ASC_PercentInstate_NL]*0 + _b[WQ_HUC4_NL]*HUC4BCG
> _scenario2_NL ) - (_b[WQ_HUC4_NL]*HUC4B
> CG_base_NL ))/_b[Cost])
warning: option expression() does not contain option predict() or xb().

Predictive margins                                      Number of obs = 14,054
Model VCE: Robust

Expression: -((_b[ASC] + _b[ASC_PercentInstate_NL]*0 + _b[WQ_HUC4_NL]*HUC4BCG_scenario
> 2_NL ) -
            (_b[WQ_HUC4_NL]*HUC4BCG_base_NL ))/_b[Cost]

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _cons |   71.92457   12.41033     5.80   0.000     47.60077    96.24838
------------------------------------------------------------------------------


.
. /* Some robustness checks related to Model 1 */
.
. // Robustness check: conditional logit
. clogit Vote ASC_PercentInstate ASC_PercentInstate_NL WQ_HUC8 WQ_HUC4 WQ_HUC4_NL Cost
>  if(Spatial_Unit==1 | Spatial_Unit==4),
>  group(ChoiceID) cluster(RespondentID)

Iteration 0:   log pseudolikelihood = -4299.2739
Iteration 1:   log pseudolikelihood = -4237.4606
Iteration 2:   log pseudolikelihood = -4237.2904
Iteration 3:   log pseudolikelihood = -4237.2904

Conditional (fixed-effects) logistic regression         Number of obs = 14,054
                                                        Wald chi2(6)  = 618.39
                                                        Prob > chi2   = 0.0000
Log pseudolikelihood = -4237.2904                       Pseudo R2     = 0.1301
```

```
                                (Std. err. adjusted for 1,730 clusters in RespondentID
> )
------------------------------------------------------------------------------
> -
                     |               Robust
                Vote | Coefficient  std. err.      z    P>|z|     [95% conf. interval
> ]
---------------------+--------------------------------------------------------------
> -
   ASC_PercentInstate |   .0053835   .0011657     4.62   0.000     .0030989    .007668
> 2
ASC_PercentInstate_NL |   .0121384   .0030826     3.94   0.000     .0060966    .018180
> 2
              WQ_HUC8 |  -.3564402   .0913605    -3.90   0.000    -.5355036   -.177376
> 9
              WQ_HUC4 |  -.5008758   .1184508    -4.23   0.000     -.733035   -.268716
> 6
           WQ_HUC4_NL |  -.5907757   .0506701   -11.66   0.000    -.6900873   -.491464
> 1
                 Cost |  -.0039083   .0001785   -21.89   0.000    -.0042582   -.003558
> 3
------------------------------------------------------------------------------
> -

. est store M2_clogit

. // Calculate McFadden's R^2
. display 1 - e(ll)/ll_0
.13005296

. scalar R2=1-e(ll)/ll_0

.
. // Robustness check: mixed logit with sampling weights
. mixlogit Vote ASC_PercentInstate ASC_PercentInstate_NL Cost [pweight=WEIGHT] if (Spa
> tial_Unit==1 | Spatial_Unit==4), rand(A
> SC WQ_HUC8 WQ_HUC4 WQ_HUC4_NL) group(ChoiceID) id(RespondentID) cluster(RespondentID
> ) nrep(500)

Iteration 0:   log likelihood = -4345.2591  (not concave)
Iteration 1:   log likelihood = -4117.3709
Iteration 2:   log likelihood = -4073.0911  (not concave)
Iteration 3:   log likelihood = -4071.8479
Iteration 4:   log likelihood =  -4071.421
Iteration 5:   log likelihood = -4071.3875
Iteration 6:   log likelihood =  -4071.341
Iteration 7:   log likelihood = -4071.2651
Iteration 8:   log likelihood = -4071.2644
Iteration 9:   log likelihood = -4071.2644

Mixed logit model                                       Number of obs = 14,054
                                                        Wald chi2(7)  = 141.31
Log likelihood = -4071.2644                             Prob > chi2   = 0.0000

                                (Std. err. adjusted for 1,730 clusters in RespondentID
> )
------------------------------------------------------------------------------
> -
                     |               Robust
                Vote | Coefficient  std. err.      z    P>|z|     [95% conf. interval
> ]
---------------------+--------------------------------------------------------------
> -
Mean                 |
   ASC_PercentInstate |   .0064027   .0028476     2.25   0.025     .0008215    .011983
> 8
ASC_PercentInstate_NL |   .0140447   .0062238     2.26   0.024     .0018462    .026243
> 2
                 Cost |    -.00517   .0005001   -10.34   0.000    -.0061502   -.004189
> 7
                  ASC |  -.1503242   .1522705    -0.99   0.324    -.4487689    .148120
> 5
```

```
              WQ_HUC8 |  -.3837928   .1859032    -2.06   0.039    -.7481563   -.019429
> 4
              WQ_HUC4 |  -.9954617   .2388505    -4.17   0.000      -1.4636   -.527323
> 3
         WQ_HUC4_NL |  -.8634045   .1622997    -5.32   0.000    -1.181506   -.545302
> 9
----------------------+-----------------------------------------------------------------
> -
SD                    |
                  ASC |   1.427331   .1123491    12.70   0.000     1.207131    1.64753
> 1
              WQ_HUC8 |  -.2970954   .4370919    -0.68   0.497     -1.15378    .559588
> 9
              WQ_HUC4 |   .7933747   .3500564     2.27   0.023     .1072767    1.47947
> 3
         WQ_HUC4_NL |   1.161453   .2955555     3.93   0.000     .5821749    1.74073
> 1
------------------------------------------------------------------------------------
> -
The sign of the estimated standard deviations is irrelevant: interpret them as
being positive

. est store M2_FixedC_n500_wt

. // Calculate McFadden's R^2
. display 1 - e(ll)/ll_0
.16413932

. scalar R2=1-e(ll)/ll_0

.
. // Robustness check: mixed logit with correlated parameters
. mixlogit Vote ASC_PercentInstate ASC_PercentInstate_NL Cost if (Spatial_Unit==1 | Sp
> atial_Unit==4), rand(ASC WQ_HUC8 WQ_HUC
> 4 WQ_HUC4_NL) group(ChoiceID) id(RespondentID) cluster(RespondentID) nrep(500) corr

Iteration 0:   log likelihood =  -4217.061  (not concave)
Iteration 1:   log likelihood =  -4088.992  (not concave)
Iteration 2:   log likelihood = -4032.9928  (not concave)
Iteration 3:   log likelihood = -3981.9713
Iteration 4:   log likelihood = -3932.4338  (not concave)
Iteration 5:   log likelihood = -3929.4274  (not concave)
Iteration 6:   log likelihood = -3923.8371  (not concave)
Iteration 7:   log likelihood = -3922.4231  (not concave)
Iteration 8:   log likelihood = -3922.1127  (not concave)
Iteration 9:   log likelihood = -3922.0122  (not concave)
Iteration 10:  log likelihood = -3921.9575  (not concave)
Iteration 11:  log likelihood = -3921.9136  (not concave)
Iteration 12:  log likelihood = -3921.8792  (not concave)
Iteration 13:  log likelihood = -3921.8496  (not concave)
Iteration 14:  log likelihood = -3921.8159
Iteration 15:  log likelihood = -3921.7377
Iteration 16:  log likelihood = -3921.6302
Iteration 17:  log likelihood = -3921.6294
Iteration 18:  log likelihood = -3921.6294

Mixed logit model                                       Number of obs = 14,054
                                                        Wald chi2(7)  = 385.11
Log likelihood = -3921.6294                             Prob > chi2   = 0.0000

                                (Std. err. adjusted for 1,730 clusters in RespondentID
> )
------------------------------------------------------------------------------------
> -
                    |               Robust
               Vote | Coefficient  std. err.      z    P>|z|     [95% conf. interval
> ]
--------------------+---------------------------------------------------------------
> -
   ASC_PercentInstate |   .0068349   .0020108     3.40   0.001     .0028937    .010776
> 1
ASC_PercentInstate_NL |   .0176884   .0045124     3.92   0.000     .0088442    .026532
```

```
> 6
                Cost |   -.006338   .0003531   -17.95   0.000    -.0070301   -.005645
> 9
                 ASC |  -.0453227   .1131353    -0.40   0.689    -.2670639    .176418
> 5
             WQ_HUC8 |  -.6451877   .1378362    -4.68   0.000    -.9153416   -.375033
> 7
             WQ_HUC4 |  -.9806877   .1828105    -5.36   0.000     -1.33899   -.622385
> 8
          WQ_HUC4_NL |  -1.060996   .1189579    -8.92   0.000    -1.294149   -.827842
> 8
---------------------+------------------------------------------------------------------
> -
                /l11 |  -1.587549   .2010828    -7.90   0.000    -1.981664   -1.19343
> 4
                /l21 |    .138841    .271083     0.51   0.609    -.3924719    .670153
> 8
                /l31 |  -.2479678   .3087208    -0.80   0.422    -.8530494    .357113
> 9
                /l41 |  -.1836684   .2801844    -0.66   0.512    -.7328197    .365482
> 8
                /l22 |   .4287746   .3199695     1.34   0.180    -.1983541    1.05590
> 3
                /l32 |   .5295354   .3663399     1.45   0.148    -.1884775    1.24754
> 8
                /l42 |  -.2296903   .2017054    -1.14   0.255    -.6250257     .16564
> 5
                /l33 |    .716128   .3410922     2.10   0.036     .0475996    1.38465
> 6
                /l43 |   1.149446   .2186403     5.26   0.000     .7209188    1.57797
> 3
                /l44 |   .6985553   .1945672     3.59   0.000     .3172106      1.079
> 9
------------------------------------------------------------------------------------
> -

. est store M2_FixedC_n500_corr

. // Calculate McFadden's R^2
. display 1 - e(ll)/ll_0
.1948605

. scalar R2=1-e(ll)/ll_0

.
.
. /* Table S6. Descriptive statistics for selected survey questions and socio-economic
>  characteristics */
.
. sum i.P3_Voted_WouldPay i.P3_Voted_OutcomeAchieved i.P3_Voted_InformPolicy i.P3_Impo
> rtance_Size i.P3_Importance_WQ i.P3_Imp
> ortance_Cost P4_Recreation_Trips i.P4_FarthestTrip_Cat ///
> Q_Female Q_Age i.Q_Race i.Q_Educ_Cat Q_Married Q_Retired Q_Income Q_Metro Q_HHsize i
> f Referendum==1 & ASC==1

    Variable |        Obs        Mean    Std. dev.       Min        Max
-------------+---------------------------------------------------------
P3_Voted_W~y |
   Disagree  |      2,000       .0265    .1606569          0          1
    Neutral  |      2,000       .1495    .3566698          0          1
      Agree  |      2,000        .824    .3809154          0          1
             |
P3_Voted_O~d |
   Disagree  |      2,000        .031     .173361          0          1
    Neutral  |      2,000        .168    .3739598          0          1
-------------+---------------------------------------------------------
      Agree  |      2,000        .801    .3993479          0          1
             |
P3_Voted_I~y |
   Disagree  |      2,000       .0325    .1773682          0          1
    Neutral  |      2,000        .207    .4052569          0          1
      Agree  |      2,000       .7605    .4268851          0          1
```

P3_Importa~e					
Little or..	2,000	.246	.4307862	0	1
Moderate ..	2,000	.4575	.4983151	0	1
Large eff..	2,000	.2965	.4568283	0	1
P3_Importa~Q					
Little or..	2,000	.0685	.2526651	0	1
Moderate ..	2,000	.307	.4613647	0	1
Large eff..	2,000	.6245	.4843729	0	1
P3_Importa~t					
Little or..	2,000	.116	.320305	0	1
Moderate ..	2,000	.357	.4792346	0	1
Large eff..	2,000	.527	.4993953	0	1
P4_Recreat~s	2,000	.706	.4557059	0	1
P4_Farthes~t					
Less than..	1,408	.3046875	.4604385	0	1
25 to 49 ..	1,408	.1732955	.378637	0	1
50 to 99 ..	1,408	.1356534	.3425418	0	1
100 to 14..	1,408	.102983	.3040446	0	1
150 to 50..	1,408	.181108	.3852444	0	1
More than..	1,408	.1022727	.3031143	0	1
Q_Female	2,000	.5295	.4992538	0	1
Q_Age	2,000	52.905	16.60213	18	93
Q_Race					
White non..	2,000	.8195	.3846996	0	1
Black non..	2,000	.0805	.2721338	0	1
Asian non..	2,000	.018	.1329844	0	1
Other non..	2,000	.01	.0995236	0	1
2 or more..	2,000	.0265	.1606569	0	1
Hispanic	2,000	.0455	.2084502	0	1
Q_Educ_Cat					
Less than..	2,000	.02	.140035	0	1
HS gradua..	2,000	.1685	.3744033	0	1
Vocationa..	2,000	.366	.4818299	0	1
Bachelor'..	2,000	.2555	.436251	0	1
Post grad..	2,000	.19	.392399	0	1
Q_Married	2,000	.5875	.4924073	0	1
Q_Retired	2,000	.238	.4259656	0	1
Q_Income	2,000	77.285	56.68138	2.5	250
Q_Metro	2,000	.743	.4370887	0	1
Q_HHsize	2,000	2.7445	1.421348	1	6

```
.
. asdoc sum i.P3_Voted_WouldPay i.P3_Voted_OutcomeAchieved i.P3_Voted_InformPolicy i.P
> 3_Importance_Size i.P3_Importance_WQ i.
> P3_Importance_Cost P4_Recreation_Trips i.P4_FarthestTrip_Cat ///
> Q_Female Q_Age i.Q_Race i.Q_Educ_Cat Q_Married Q_Retired Q_Income Q_Metro Q_HHsize i
> f Referendum==1 & ASC==1, replace save(
> Results\Summary.doc) title(Descriptive Statistics)
```

Variable	Obs	Mean	Std. dev.	Min	Max
P3_Voted_W~y					
Disagree	2,000	.0265	.1606569	0	1
Neutral	2,000	.1495	.3566698	0	1
Agree	2,000	.824	.3809154	0	1
P3_Voted_O~d					
Disagree	2,000	.031	.173361	0	1
Neutral	2,000	.168	.3739598	0	1
Agree	2,000	.801	.3993479	0	1
P3_Voted_I~y					
Disagree	2,000	.0325	.1773682	0	1
Neutral	2,000	.207	.4052569	0	1
Agree	2,000	.7605	.4268851	0	1
P3_Importa~e					
Little or..	2,000	.246	.4307862	0	1
Moderate ..	2,000	.4575	.4983151	0	1
Large eff..	2,000	.2965	.4568283	0	1
P3_Importa~Q					
Little or..	2,000	.0685	.2526651	0	1
Moderate ..	2,000	.307	.4613647	0	1
Large eff..	2,000	.6245	.4843729	0	1
P3_Importa~t					
Little or..	2,000	.116	.320305	0	1
Moderate ..	2,000	.357	.4792346	0	1
Large eff..	2,000	.527	.4993953	0	1
P4_Recreat~s	2,000	.706	.4557059	0	1
P4_Farthes~t					
Less than..	1,408	.3046875	.4604385	0	1
25 to 49 ..	1,408	.1732955	.378637	0	1
50 to 99 ..	1,408	.1356534	.3425418	0	1
100 to 14..	1,408	.102983	.3040446	0	1
150 to 50..	1,408	.181108	.3852444	0	1
More than..	1,408	.1022727	.3031143	0	1
Q_Female	2,000	.5295	.4992538	0	1
Q_Age	2,000	52.905	16.60213	18	93
Q_Race					
White non..	2,000	.8195	.3846996	0	1
Black non..	2,000	.0805	.2721338	0	1
Asian non..	2,000	.018	.1329844	0	1
Other non..	2,000	.01	.0995236	0	1
2 or more..	2,000	.0265	.1606569	0	1
Hispanic	2,000	.0455	.2084502	0	1
Q_Educ_Cat					
Less than..	2,000	.02	.140035	0	1
HS gradua..	2,000	.1685	.3744033	0	1
Vocationa..	2,000	.366	.4818299	0	1
Bachelor'..	2,000	.2555	.436251	0	1
Post grad..	2,000	.19	.392399	0	1
Q_Married	2,000	.5875	.4924073	0	1
Q_Retired	2,000	.238	.4259656	0	1
Q_Income	2,000	77.285	56.68138	2.5	250
Q_Metro	2,000	.743	.4370887	0	1

```
    Q_HHsize |      2,000      2.7445    1.421348          1          6
Click to Open File:  Results\Summary.doc

.
.
. /* Table S7. Effects of socio-economic characteristics on the willingness-to-pay for
>  water quality improvements */
.
. global ASC_covariates ASC_Q_Female ASC_Q_Age ASC_Q_Educ_2 ASC_Q_Educ_3 ASC_Q_Educ_4
> ASC_Q_Educ_5 ASC_Q_Race_2 ASC_Q_Race_3
> ASC_Q_Race_4 ASC_Q_Race_5 ASC_Q_Race_6 ASC_Q_Married ASC_Q_Retired ASC_Q_Income ASC_
> Q_Metro ASC_Q_HHsize

.
. // Estimate vacuous model; needed to compute R^2
. clogit Vote, group(ChoiceID) cluster(RespondentID)

Iteration 0:   log pseudolikelihood = -12236.127

Conditional (fixed-effects) logistic regression   Number of obs   =      35306
                                                  LR chi2(0)      =       0.00
                                                  Prob > chi2     =          .
Log pseudolikelihood = -12236.127                 Pseudo R2       =     0.0000

------------------------------------------------------------------------------
        Vote | Coefficient  Std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
------------------------------------------------------------------------------

. scalar ll_0=e(ll)

.
. // mixed logit in preference space; fixed cost parameter
. mixlogit Vote Cost $ASC_covariates, rand(ASC WQ_HUC8 WQ_HUC4 WQ_Medium WQ_Large WQ_H
> UC4_NL WQ_Medium_NL) group(ChoiceID) id
> (RespondentID) cluster(RespondentID) nrep(500)

Iteration 0:   log likelihood = -10584.466  (not concave)
Iteration 1:   log likelihood = -9734.1129  (not concave)
Iteration 2:   log likelihood = -9729.2553
Iteration 3:   log likelihood = -9687.2986  (not concave)
Iteration 4:   log likelihood = -9639.9492  (not concave)
Iteration 5:   log likelihood = -9456.5319
Iteration 6:   log likelihood = -9424.2529
Iteration 7:   log likelihood = -9421.9995
Iteration 8:   log likelihood = -9421.7826
Iteration 9:   log likelihood = -9421.7796
Iteration 10:  log likelihood = -9421.7796

Mixed logit model                                 Number of obs =  35,306
                                                  Wald chi2(24) = 1065.62
Log likelihood = -9421.7796                       Prob > chi2   =  0.0000

                        (Std. err. adjusted for 2,000 clusters in RespondentID)
------------------------------------------------------------------------------
             |               Robust
        Vote | Coefficient  std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
Mean         |
        Cost |  -.0059949   .0002081   -28.81   0.000    -.0064028   -.0055871
 ASC_Q_Female |   .1066049    .087999     1.21   0.226      -.06587    .2790798
    ASC_Q_Age |  -.0092248   .0034901    -2.64   0.008    -.0160652   -.0023843
 ASC_Q_Educ_2 |   .5130983   .3107272     1.65   0.099    -.0959158    1.122112
 ASC_Q_Educ_3 |   .5453185   .3020153     1.81   0.071    -.0466205    1.137258
 ASC_Q_Educ_4 |   .7460658   .3090782     2.41   0.016     .1402837    1.351848
 ASC_Q_Educ_5 |   .8081881   .3170413     2.55   0.011     .1867985    1.429578
 ASC_Q_Race_2 |   .1193803   .1669742     0.71   0.475    -.2078831    .4466437
 ASC_Q_Race_3 |   .0644423   .2582347     0.25   0.803    -.4416884    .5705729
 ASC_Q_Race_4 |  -.1145167   .5426358    -0.21   0.833    -1.178063    .9490299
 ASC_Q_Race_5 |   .2680519   .2958019     0.91   0.365    -.3117092     .847813
 ASC_Q_Race_6 |  -.2001966   .2087242    -0.96   0.337    -.6092885    .2088952
ASC_Q_Married |  -.0303932   .0969218    -0.31   0.754    -.2203565    .1595701
```

```
ASC_Q_Retired |   .1476025   .1260222     1.17   0.242    -.0993965    .3946015
 ASC_Q_Income |   .0043211   .0008521     5.07   0.000      .002651    .0059911
  ASC_Q_Metro |    .084942   .1006638     0.84   0.399    -.1123555    .2822396
 ASC_Q_HHsize |   .0328836   .0354631     0.93   0.354    -.0366228    .1023901
          ASC |  -.5293078     .35855    -1.48   0.140    -1.232053    .1734372
      WQ_HUC8 |  -.7227913   .0757998    -9.54   0.000    -.8713562   -.5742263
      WQ_HUC4 |  -.9870808   .1103003    -8.95   0.000    -1.203265   -.7708962
    WQ_Medium |  -.9055018    .106917    -8.47   0.000    -1.115055   -.6959483
     WQ_Large |  -.8936358   .1077567    -8.29   0.000    -1.104835   -.6824366
   WQ_HUC4_NL |   -.809474   .0734638   -11.02   0.000    -.9534605   -.6654875
 WQ_Medium_NL |  -.9335375   .0856193   -10.90   0.000    -1.101348   -.7657268
--------------+-----------------------------------------------------------------
SD            |
          ASC |   1.539288   .0495175    31.09   0.000     1.442236    1.636341
      WQ_HUC8 |   .9257752   .0713825    12.97   0.000      .785868    1.065682
      WQ_HUC4 |  -.6090245   .2080651    -2.93   0.003    -1.016825   -.2012244
    WQ_Medium |   .0790835   .1509793     0.52   0.600    -.2168306    .3749975
     WQ_Large |   .1078064   .1553612     0.69   0.488    -.1966959    .4123087
   WQ_HUC4_NL |   .6467426    .174779     3.70   0.000     .3041819    .9893032
 WQ_Medium_NL |  -1.232489      .1558    -7.91   0.000    -1.537852   -.9271268
------------------------------------------------------------------------------
The sign of the estimated standard deviations is irrelevant: interpret them as
being positive

. est store M3_FixedC_Demo

. // Calculate McFadden's R^2
. display 1 - e(ll)/ll_0
.23000313

. scalar R2=1-e(ll)/ll_0

. // Save model results
. outreg2 using "Results\M3_FixedC_Demo.rtf", stat(coef se) alpha (0.01, 0.05, 0.10) a
> ddstat(Log-likelihood, e(ll), McFadden'
> s R2, R2) replace
Results\M3_FixedC_Demo.rtf
dir : seeout

.
. // convert utility parameters into willingness-to-pay estimates (as reported in tabl
> e)
. foreach var in $ASC_covariates {
  2. nlcom -_b[`var']/_b[Cost]
  3. }

       _nl_1: -_b[ASC_Q_Female]/_b[Cost]

------------------------------------------------------------------------------
        Vote | Coefficient  Std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _nl_1 |   17.78252   14.68177     1.21   0.226    -10.99322    46.55827
------------------------------------------------------------------------------

       _nl_1: -_b[ASC_Q_Age]/_b[Cost]

------------------------------------------------------------------------------
        Vote | Coefficient  Std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _nl_1 |  -1.538762   .5829631    -2.64   0.008    -2.681349   -.3961756
------------------------------------------------------------------------------

       _nl_1: -_b[ASC_Q_Educ_2]/_b[Cost]

------------------------------------------------------------------------------
        Vote | Coefficient  Std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _nl_1 |   85.58878   51.81967     1.65   0.099    -15.97592    187.1535
------------------------------------------------------------------------------

       _nl_1: -_b[ASC_Q_Educ_3]/_b[Cost]
```

Vote	Coefficient	Std. err.	z	P>|z|	[95% conf.	interval]
_nl_1	90.96336	50.31573	1.81	0.071	-7.653661	189.5804

_nl_1: -_b[ASC_Q_Educ_4]/_b[Cost]

Vote	Coefficient	Std. err.	z	P>|z|	[95% conf.	interval]
_nl_1	124.4496	51.43869	2.42	0.016	23.63159	225.2676

_nl_1: -_b[ASC_Q_Educ_5]/_b[Cost]

Vote	Coefficient	Std. err.	z	P>|z|	[95% conf.	interval]
_nl_1	134.812	52.74627	2.56	0.011	31.43126	238.1928

_nl_1: -_b[ASC_Q_Race_2]/_b[Cost]

Vote	Coefficient	Std. err.	z	P>|z|	[95% conf.	interval]
_nl_1	19.91356	27.8833	0.71	0.475	-34.73669	74.56382

_nl_1: -_b[ASC_Q_Race_3]/_b[Cost]

Vote	Coefficient	Std. err.	z	P>|z|	[95% conf.	interval]
_nl_1	10.74947	43.08236	0.25	0.803	-73.6904	95.18934

_nl_1: -_b[ASC_Q_Race_4]/_b[Cost]

Vote	Coefficient	Std. err.	z	P>|z|	[95% conf.	interval]
_nl_1	-19.10228	90.49885	-0.21	0.833	-196.4768	158.2722

_nl_1: -_b[ASC_Q_Race_5]/_b[Cost]

Vote	Coefficient	Std. err.	z	P>|z|	[95% conf.	interval]
_nl_1	44.71314	49.33166	0.91	0.365	-51.97513	141.4014

_nl_1: -_b[ASC_Q_Race_6]/_b[Cost]

Vote	Coefficient	Std. err.	z	P>|z|	[95% conf.	interval]
_nl_1	-33.39435	34.79816	-0.96	0.337	-101.5975	34.80878

_nl_1: -_b[ASC_Q_Married]/_b[Cost]

Vote	Coefficient	Std. err.	z	P>|z|	[95% conf.	interval]
_nl_1	-5.06982	16.16673	-0.31	0.754	-36.75602	26.61638

_nl_1: -_b[ASC_Q_Retired]/_b[Cost]

```
------------------------------------------------------------------------------
        Vote | Coefficient  Std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _nl_1 |   24.62124    21.0174     1.17   0.241     -16.5721    65.81458
------------------------------------------------------------------------------

       _nl_1: -_b[ASC_Q_Income]/_b[Cost]

------------------------------------------------------------------------------
        Vote | Coefficient  Std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _nl_1 |    .720786   .1430936     5.04   0.000     .4403278    1.001244
------------------------------------------------------------------------------

       _nl_1: -_b[ASC_Q_Metro]/_b[Cost]

------------------------------------------------------------------------------
        Vote | Coefficient  Std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _nl_1 |   14.16899   16.77659     0.84   0.398    -18.71253    47.05051
------------------------------------------------------------------------------

       _nl_1: -_b[ASC_Q_HHsize]/_b[Cost]

------------------------------------------------------------------------------
        Vote | Coefficient  Std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
       _nl_1 |   5.485246   5.918547     0.93   0.354    -6.114893    17.08538
------------------------------------------------------------------------------


. 
. // test for equality of race/ethnicity categories
. test (ASC_Q_Race_2 =ASC_Q_Race_3 =ASC_Q_Race_4 =ASC_Q_Race_5 =ASC_Q_Race_6=0)

 ( 1)  [Mean]ASC_Q_Race_2 - [Mean]ASC_Q_Race_3 = 0
 ( 2)  [Mean]ASC_Q_Race_2 - [Mean]ASC_Q_Race_4 = 0
 ( 3)  [Mean]ASC_Q_Race_2 - [Mean]ASC_Q_Race_5 = 0
 ( 4)  [Mean]ASC_Q_Race_2 - [Mean]ASC_Q_Race_6 = 0
 ( 5)  [Mean]ASC_Q_Race_2 = 0

           chi2(  5) =    2.54
         Prob > chi2 =    0.7702

. 
. 
. 
. 
end of do-file

. do "C:\Users\cvossler\AppData\Local\Temp\STD3780_000000.tmp"

. log close
      name:  <unnamed>
       log:  D:\Research\Water Quality Valuation\Phase 1 Analysis\Results\PNAS manuscr
> ipt.log
  log type:  text
 closed on:  22 Apr 2022, 13:23:19
------------------------------------------------------------------------------------------------
> ----------------------------------------
```