DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
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CESAM-RD

12 April 2009

PUBLIC NOTICE
U.S. ARMY CORPS OF ENGINEERS

PROXIMITY FACTOR METHOD

TO WHOM IT MAY CONCERN: The 2008 Mitigation Rule, 33 C.F.R. 332 – Compensatory Mitigation for Losses of Aquatic Resources states the U.S. Army Corps of Engineers (Corps) must use a watershed approach when evaluating compensatory mitigation. Mobile District supports the use of watershed approach through the establishment of mitigation banking service areas which utilize the 8 digit hydrologic unit code (HUC), or watershed, as the delineating factor for a bank's service area. The Mobile District is circulating this notice to ensure the public is aware of the method used for calculating the required compensatory mitigation when the project is not located within the mitigation bank's service area.

Please contact Mr. Michael Moxey, Mitigation Banking Interagency Review Team Chair, at (251) 694-3771, or by e-mail at Michael.b.moxey@usace.army.mil, if you have any questions. For additional information about our Regulatory Program, please visit our site at www.sam.usace.army.mil/RD/reg/.

MOBILE DISTRICT
U.S. Army Corps of Engineers

CALCULATING A PROXIMITY FACTOR

Introduction: The importance of proximity between the impact and mitigation sites will vary with the individual wetland and stream functions being considered. Simple arithmetic is deceptive in determining replacement of functions. Replacement is not a single matter of equivalency. It depends upon the context. While a mitigation bank proposal may numerically compensate for the loss of a given function, different components of the broader ecological system would be benefited and different landowners and segments of the population would be benefited and burdened. Therefore, the destruction of wetland and stream functions and their replacement at other sites need to be assessed in the hydrologic and ecological context. The following is an example of a method to calculate a proximity factor (multiplier). Other methods to calculate a proximity factor may be considered by the IRT.

The 2008 Mitigation Rule, 33 C.F.R. 332 – Compensatory Mitigation for Losses of Aquatic Resources states the Corps must use a watershed approach when evaluating compensatory mitigation. However, the rule does not provide direct instruction on the application of the watershed approach; rather it provides general guidance on the topic and relies on the individual Corps district to implement the approach into its district specific guidance. Mobile District supports the use of watershed approach through the establishment of mitigation banking service areas which utilize the 8 digit hydrologic unit code (HUC), or watershed, as the delineating factor for a bank's service area. Specifically, mitigation bank service areas are based upon the 8-digit watershed approach and projects are required to purchase mitigation credits

from mitigation banks whose service area they are located within. Projects may go outside the watershed to purchase mitigation credits if there are no mitigation banks that include that watershed within their service area, or there are no available mitigation credits from mitigation banks whose service area includes that watershed. Projects that go outside the watershed to purchase compensatory mitigation credits are required to use this Proximity Factor Method unless this requirement is waived by the Corps.

The usual suite of wetland and /or stream functions were lumped into two broad categories which were used to determine common quantifiable variables directly affecting the ability of a mitigation bank to provide successful ecological replacement for lost wetland and/or stream functions. These two categories are habitat and hydrology. Functions were categorized by considering if they were only applicable within the watershed of the impact site being impacted. With the exception of wildlife habitat support for some species, most functions are best offset within the same watershed. Therefore, no proximity factor is applied to impacts that occur within the same 8-digit HUC as the mitigation bank. However, the IRT recognizes that the relevance of a mitigation effort is diminished as the primary watersheds of the mitigation site and impact site become further removed. Diminishing relevance expresses the relationship of the mitigation bank service area and how it relates to the impact site. We also need to compensate for the relative importance of these functions to the watersheds of the impact site and the mitigation bank. To do this, the proportion of functions performed in the watershed of the impact site is compared to the sum of the amount of functions available in both the impact site and mitigation bank watersheds. A simple way to numerically score this concept is to proportionally relate the area of the impact site watershed to the total area of both watersheds.

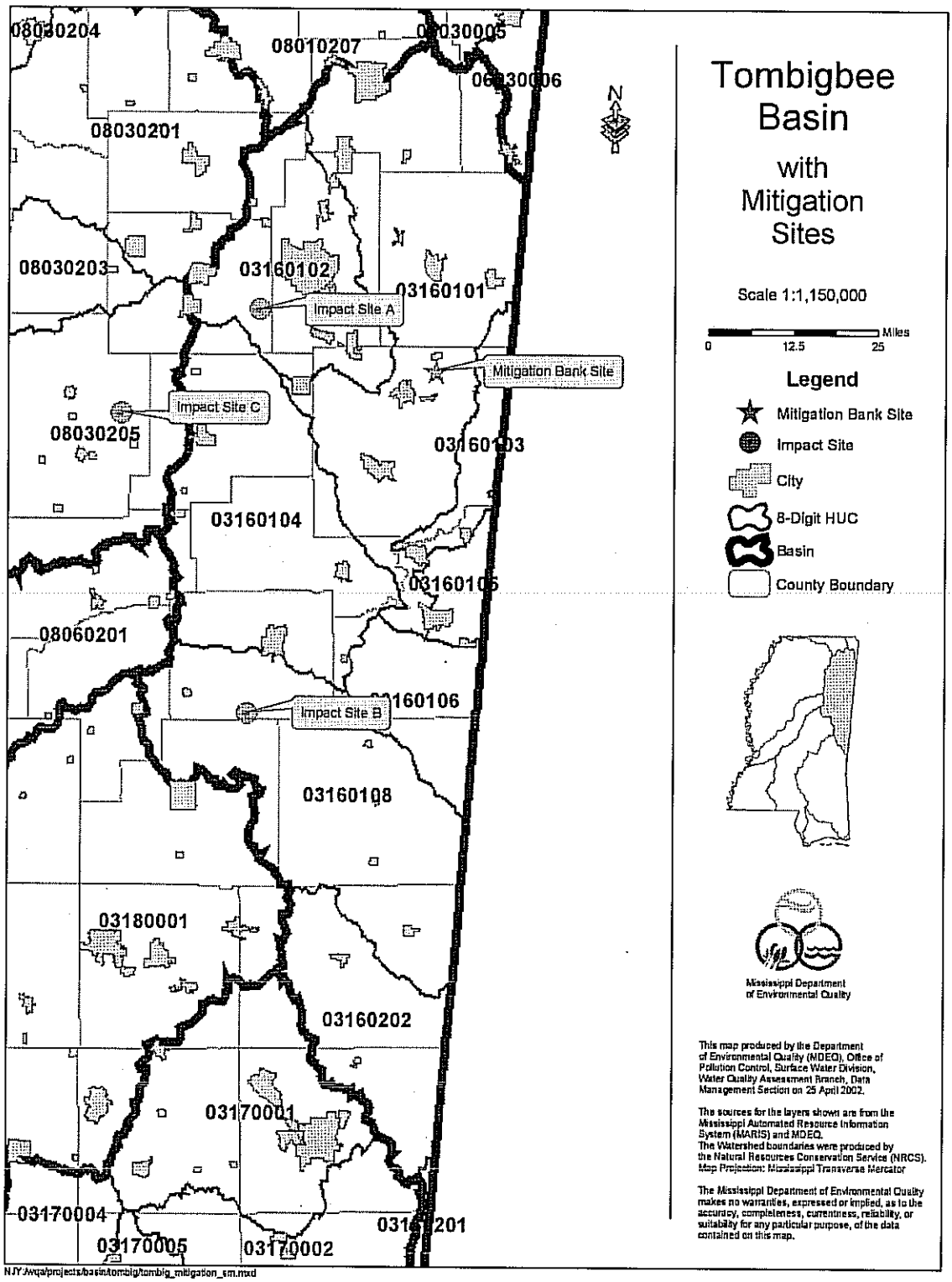
Out-of-basin: The IRT discourages mitigation outside of the basin (Figure 1). However, this will be considered by the regulatory agencies on a case-by-case basis for situations such as; linear projects, projects in close proximity to the basin line, situations where there is no ecologically preferable alternative, etc. In the event out-of-basin mitigation is allowed, the proximity factor will be subject to an additional multiplier of 1.5 to compensate for the diminished relevance of hydrologic function compensation.

Methodology:

$$Px = \sqrt{(\#HUCS) + \frac{IA}{\frac{IA + BA}{2}}}$$

Where:

Px = The proximity factor (multiplier) [2 decimal places]
#HUCS = The number of 8-digit HUC watersheds contacting a line between the impact site and the bank site's HUC (See attached)
IA = The area of the 8-digit HUC in which the impact site is located (see Table 1)
BA = The area of the 8-digit HUC in which the mitigation bank is located (see Table 1)


08030204
08010207
08030005
08030006
08030201
08030203
03160102
03160101
Impact Site A
Mitigation Bank Site
Impact Site C
08030205
03160103
03160104
03160105
08060201
03160106
Impact Site B
03160108
03180001
03160202
03170001
03170004
03170005
03170002
N
Tombigbee Basin
with Mitigation Sites
Scale 1:1,150,000
Miles
0
12.5
25
Legend
Mitigation Bank Site
Impact Site
City
8-Digit HUC
Basin
County Boundary
Mississippi Department of Environmental Quality
This map produced by the Department of Environmental Quality (MDEQ), Office of Pollution Control, Surface Water Division, Water Quality Assessment Branch, Data Management Section on 25 April 2002.
The sources for the layers shown are from the Mississippi Automated Resource Information System (MARIS) and MDEQ.
The Watershed boundaries were produced by the Natural Resources Conservation Service (NRCS).
Map Projection: Mississippi Transverse Mercator
The Mississippi Department of Environmental Quality makes no warranties, expressed or implied, as to the accuracy, completeness, currentness, reliability, or suitability for any particular purpose, of the data contained on this map.
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March 2009

Example #1:

Impact Site A is in the 03160102 HUC. The mitigation bank is in the 03160101 HUC.

From Table 1:
#HUCS = 1
IA = 439430.07
BA = 1061534.36

$$Px = \sqrt{(1) + \frac{439430.07}{\frac{439430.07 + 1061534.36}{2}}}$$

$Px = 1.07$

Example #2

Impact Site B is in the 03160108 HUC.

#HUCS = 2
IA = 819569.61
BA = 1061534.36

Px = 1.49

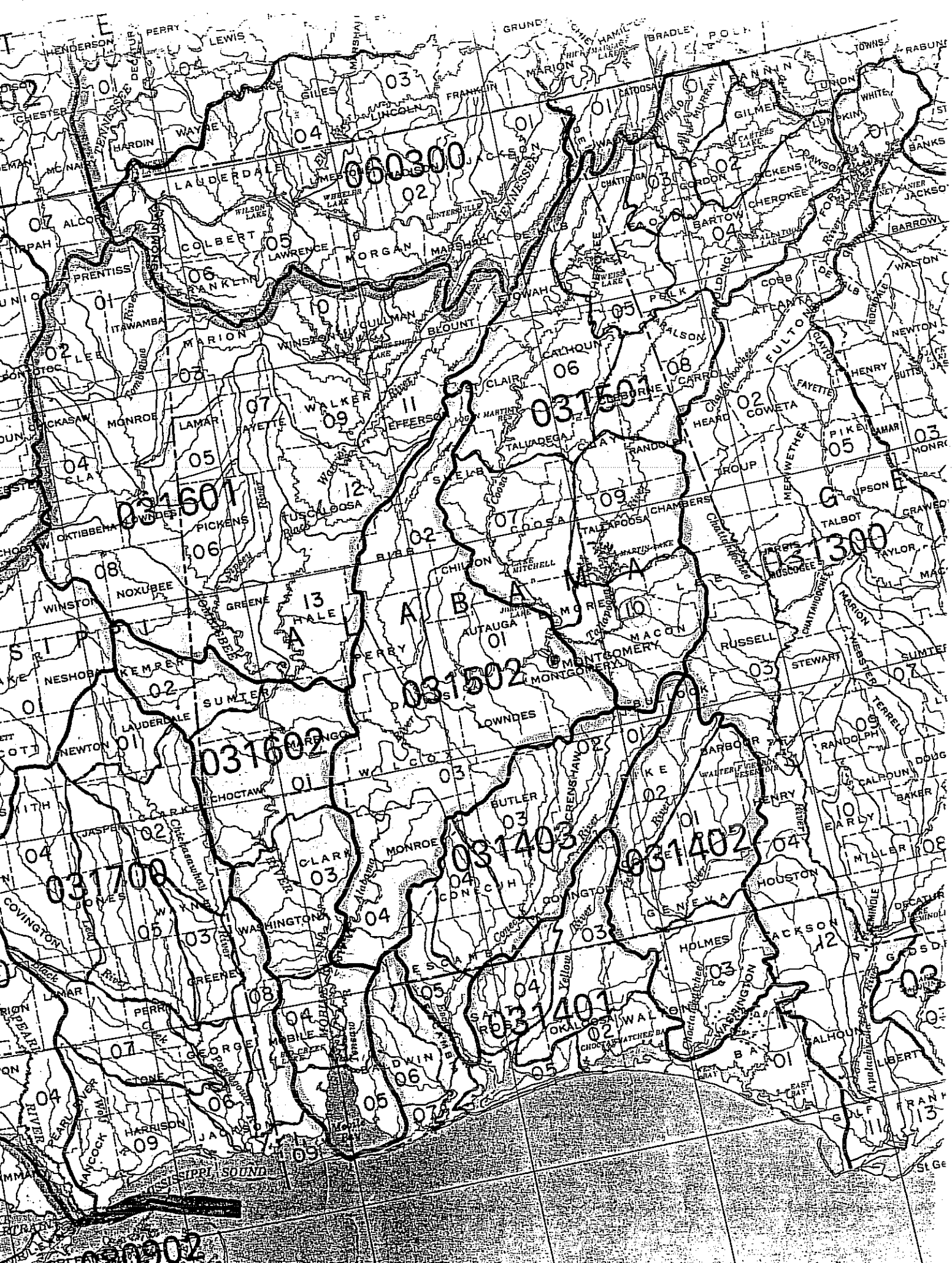
Example #3

Impact Site C is in the 08030205 HUC
#HUCS = 2
IA = 1471858.68
BA = 1061534.36

Px = 1.51

Out-of-Basin Multiplier = 1.5

Total = 1.51 x 1.5 = 2.27


060300
031501
031601
031502
031602
031700
031403
031402
031401
131300
ALABAMA
MISSISSIPPI SOUND

Alabama 8-Digit Hydrologic Unit Code (HUC) Area in Acres

HUC	Acres	Total Acres
3130002	360798	360798
3130003	915532	915532
3130004	372709.938	372709.938
3130012	168502.219	168502.219
3140103	325183.531	325183.531
3140104	89132.688	89132.688
3140106	417948.219	417948.219
3140107	114818.266	114818.266
3140201	986791.938	986791.938
3140202	935052.688	935052.688
3140203	84232.664	84232.664
3140301	527929.5	527929.5
3140302	382331	382331
3140303	670133.688	670133.688
3140304	641127	641127
3140305	240509.531	779277.656
3150105	538768.125	
3150106	1663261.875	1663261.875
3150107	1232061.25	1232061.25
3150108	479349.813	479349.813
3150109	1015596.875	1015596.875
3150110	1084163.125	1084163.125
3150201	1539992.625	1539992.625
3150202	1170198.25	1170198.25
3150203	1431458	1431458
3150204	899686.313	899686.313
3160101	81773.516	81773.516
3160103	425909.375	425909.375
3160105	423663.5	423663.5
3160106	815807.688	815807.688
3160107	506019.625	506019.625
3160108	91713.977	91713.977
3160109	883901.438	883901.438
3160110	635943	635943
3160111	772715.813	772715.813
3160112	802948.625	802948.625
3160113	930379.875	930379.875
3160201	1312315.25	1312315.25
3160202	237591.156	237591.156
3160203	1033578	1033578
3160204	619248.375	619248.375
3160205	560998.875	560998.875
3170002	135.464	41647.478
3170002	687.412	
3170002	72.688	
3170002	40703.875	
3170002	48.039	
3170003	400.933	456.628

Mississippi 8-Digit Hydrologic Unit Code (HUC) Area in Acres

HUC	SUM_ACRES
03160101	1061534.3600
03160102	439430.0700
03160103	127879.7900
03160104	716016.8100
03160105	91152.9300
03160106	230304.0300
03160108	819569.6100
03160201	22610.2600
03160202	380269.2400
03170001	580537.0100
03170002	884603.9900
03170003	425303.2800
03170004	1121090.5200
03170005	1167114.0900
03170006	388373.3600
03170007	811268.8600
03170008	219759.5100
03170009	1049864.2100
03180001	1574422.9300
03180002	1267270.9000
03180003	783769.4100
03180004	818430.3400
03180005	537812.6800
06030005	151161.5000
06030006	93559.3400
06040001	24441.7400
08010100	13232.9000
08010207	461093.3000
08010208	8565.2800
08010210	157773.4200
08010211	53925.7900
08020100	252347.7200
08030100	270773.2200
08030201	1055696.4000
08030202	646591.7100
08030203	482034.3800
08030204	1231632.4500
08030205	1471858.6800
08030206	985323.6700
08030207	2021408.6200
08030208	136517.2100
08030209	589554.7900
08060100	235018.7600
08060201	945809.4400
08060202	1217227.5100
08060203	688519.7600
08060204	343635.7300
08060205	783742.9000
08060206	222406.8200
08070201	106588.9800
08070202	371076.7700
08070203	43167.4100
08070205	166115.2300

08070201	106588.9800
08070202	371076.7700
08070203	43167.4100
08070205	166115.2300