The Effects of Foreclosure on
Children and Schools:
A NNIP Cross Site Study

District of Columbia Analysis Plan and Data Diagnostic Memo

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Foreclosure and Public School Students
DC Analysis Plan for Phase I and II
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Washington D.C.'s housing market and foreclosure trends

Washington, D.C. has 282,411 housing units, and almost most half (44 percent) of the housing units are 10 and more units per structure, 26 percent are single attached housing (row houses and townhomes), 18 percent are mid-sized units of 2 to 9 units, and 13 percent is detailed single detached housing. More than half of the housing stock is rental housing (53.5 percent) versus 46.5 percent of owner occupied housing. The rental vacancy rate of the District was 17.4 percent in 2005-2007, much higher than New York City's rental vacancy rate. [1]

Washington, D.C.'s housing market went through an incredible boom starting at the beginning of the decade and peaking in 2006. The District's inflation-adjusted sales prices increased more than 200 percent between 1995 and 2005. Home building in the District of Columbia reached a 40-year high in 2005, particularly for new condominiums and apartment conversations. Between 2001 and 2005, the D.C. condominium stock grew by 7,001 units, or 23.6 percent, and accounted for essentially all of the growth in the city's supply of ownership housing. Condominiums accounted for 26.4 percent of the city's ownership units, up four percentage points in just four years[2].

The recent national economic and housing market downturn has affected the District. The District's housing market began cooling off by the fourth quarter of 2007 with housing prices beginning to drop and units sitting longer on the market. New construction also began slowing in 2007 although it was still at higher numbers than in 2005. Sales volume for the end of 2008 was almost half the volume five years earlier. Sales prices of single-family homes fell sharply between 2007 and 2008, although condominium prices dropped only slightly. The median price of a single family home fell 21 percent between fourth quarter 2007 and fourth quarter 2008, from $478,000 to $414,000 (2008 dollars).The median sales price was only 14 percent higher than five years earlier and 141 percent higher than in the fourth quarter of 1998. Condominium prices declined only 5 percent between fourth quarter 2007 and fourth quarter 2008 reaching a median price of

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[1] All data are from the 2005-2007 American Community Survey.

[2] All data about the housing market are from Housing Monitor, Summer 2006.

$357,000. The median price in fourth quarter 2008 was higher than prices five and 10 years earlier, when adjusted for inflation. Real estate listing data reflected the downturn of the housing market, with larger numbers of listing per sale and increases of time on the market across all types of housing.[3]

Foreclosures, or the legal proceeding that ends an owner's rights to a property that was used to secure a mortgage loan, are an unfortunate but expected occurrence to some who hold mortgages. The foreclosure process is initiated by the mortgage lender, or someone legally authorized to act on the lender's behalf, when an owner falls behind on mortgage payments and the lender determines that there is no other recourse for recovering the mortgage debt. In the District of Columbia, foreclosure is a non-judicial process, which means that foreclosure is usually accomplished without use of the courts or without any judicial review or oversight. In the event of a mortgage delinquency, normally the lender or loan servicer will make several attempts to reach the borrower requesting that the overdue payments be made. If the loan continues to remain past due, then the lender or servicer may begin a foreclosure process to sell the property and attempt to recover unpaid loan amounts and other costs. Most lenders or servicers will wait until a borrower is 90 days late or more on mortgage payments before initiating foreclosure proceedings. In the District of Columbia, however, there does not seem to be any legal restriction on when the foreclosure process can be started against a delinquent borrower.

To initiate a foreclosure against a homeowner, the lender, or the lender's agent, must send a notice of foreclosure sale, by certified mail, return receipt requested, to the property owner at the owner's last known address. A copy of this notice must also be sent to the D.C. Recorder of Deeds.[4] The foreclosure sale may not take place less than 30 days after the notice has been received by the Recorder of Deeds.

In the event that a notice of foreclosure sale has been issued against a District of Columbia property owner, there are several outcomes that can take place:

- The property owner can **pay the minimum amount required to cure the loan default**, and thus stop the foreclosure. The amount required to cure foreclosure is

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[3] All data about the housing market cool down are from Housing Monitor, Spring 2009.

[4] The notice of foreclosure sale must include the following information: the names and addresses of all property owners; the date, time, and place of the foreclosure sale; the address and a description of the property; the amount of the balance owed on the loan, and the minimum amount required to cure the default obligation and avoid the foreclosure; and the name and contact information for the person to contact to stop the foreclosure sale.

specified under D.C. law (DC ST § 42-815.01), and may include late fees, attorney fees, foreclosure costs, and all accruals. D.C. law specifies that a borrower may only cure a default on a mortgage to avoid foreclosure up to five business days prior to the date of the sale and only one time in any two consecutive calendar years.

- The property owner can try to reach an accommodation with the lender, such as negotiating a **forbearance agreement** or a **loan modification** (such as reducing the principal owed on the loan or lowering the loan's interest rate), which will allow the owner to remain in the home and continue to make loan payments to the existing lender.

- The property owner can attempt to **refinance** the property with a new, more affordable mortgage with the same or a different lender.

- The property owner can attempt to **sell the property** to try to recover proceeds to satisfy the debt obligation. If the sale price is more than the amount currently owed on the mortgage, then the sale proceeds can be used to pay off the mortgage in its entirety. If the price is less than what is owed, however, the owner must either come up with the remaining funds from another source or else try to convince the lender to accept a **short sale**. In a short sale, lender agrees to accept the proceeds of the sale even though they are less than the total amount owed. The homeowner will walk away from a short sale having lost the home but, in most cases, without any outstanding debt. If, however, the lender refuses to forgive the outstanding amount owed, the owner may still be encumbered by debt after a short sale.

- Another alternative is for the lender to accept a **deed in lieu of foreclosure**. In this case, the owner turns the home over to the lender who agrees to accept it instead of going through a foreclosure. As with a short sale, the owner may be able to walk away without any outstanding debt, but the lender may also choose not to forgive the full loan balance if the home cannot be sold to cover the entire amount owed.

- Finally, the **foreclosure sale** can go through as specified in the notice. In the District of Columbia, this is accomplished through a **trustee's deed sale**. In most cases, a new owner will acquire the property at the foreclosure sale. In some circumstances, however, no new owner will be willing to buy the property at an acceptable price, in which case the property reverts to the lender. This is referred to as a **real estate owned (REO) property**.[5]

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[5] Information describing the process of foreclosure comes from Housing Monitor, Spring 2009.

Foreclosures began to rise rapidly in spring 2007 in the District of Columbia. In the District, nearly 2 percent of all loans were in foreclosure in 2008, much lower than some of the heavily affected surrounding counties and lower than the national rate of 2.9 percent.[6] Foreclosure are more likely to occur in the lowest priced neighborhoods in the District such as Deanwood, Congress Heights, and Barry Farm/Anacostia east of the Anacoastia River in Wards 7 and 8, and Brightwood Park/Petworth located in Ward 4 a with rates ranging from 3.1 to 4.7 percent.[7]

The share of properties reaching foreclosure completion (foreclosure sale) has been increasing exponentially. In 2003, only 3 percent of the single-family homes and condominium units in foreclosure at the beginning of the year in the District reached a foreclosure sale by year's end. In 2008, however, this rate had risen to 38 percent. While not as high as the 45 percent in 1999, the foreclosure completion rate could go even higher if home prices continue to fall and if the economy does not quickly improve.[8]

The time for homes to go through the foreclosure process in the District has been getting shorter as well. For single-family homes and condominiums that started the foreclosure process in 2003, the average time for a first foreclosure notice to a completed foreclosure sale was about 19 months (591 days). By 2007, the average time to a foreclosure sale decreased to 240 days and for properties starting the process in 2008 Q1, only 190 days.

Student Mobility

When analyzing the impact of foreclosures on public school students, it is important to recognize that students and their families (especially low-income families) have high residential mobility irrespective of a foreclosure crisis. Mobility for young children is common especially in urban districts and for children of low-income families. A 2004 report based on Current Population Survey results showed that residential mobility varies by age, with 21.4 percent of children age one to four, 15.9 percent of children age five to

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[6] By June 2009, about 2.7 percent of all mortgages in the greater Washington region were in foreclosure, similar to the 2.9 percent national rate. Prince George's County, Maryland has the highest county foreclosure rate of the Washington region at more than 5 percent followed by Charles County and Prince William County in Virginia ranking second and third in the Washington region, with foreclosure rates of 3.9 and 3.7 percent, respectively.

[7] Data from Housing in the Nation's Capital 2009 (forthcoming).

[8] Data about the trends in foreclosure come from Housing Monitor, Spring 2009.

nine, and 13.2 percent of children age 10 to 14 changing residence in the previous year. [9]
However, African American and Hispanic elementary school children are more likely to
move than white children: 21.6 percent of African American children and 18.6 percent of
these Hispanic children moved from one year to the next. Older children, between the
ages of 10 and 19, tended to move the same as the average of children of all ages (13.7
versus 14.2 percent, respectively).

Children in poor families were more likely to change residences, with 26.0 percent of
poor children age 5 to 9 moving from one year to the next compared to 11.8 percent of
non-poor children in the same age group. Poverty also had an impact when controlling
for race and ethnicity.

Besides residential mobility, children switching schools from one year to the next (i.e.,
school mobility) is a problem that affects both students and schools. A 2003 study using
data from the 1998 National Assessment of Education Progress showed that 34 percent of
4th graders changed schools at least once in the previous two years. [10] Again, these
numbers vary by race, with African American (43 percent) and Hispanic (41 percent)
students more likely to switch schools. Likewise, students from low-income families, as
measured by their eligibility for free or reduced price lunch, were more likely to have
switched schools than those who were not eligible (43 percent versus 26 percent,
respectively).

There has been no in-depth analysis of the mobility rates of the public school students in
the District, mainly due to the fact that the District's public school system (DCPS and
public charters) do not have a reliable longitudinal data set. (However, the state office is
in the process of developing such a dataset.) From an analysis conducted by
NeighborhoodInfo DC that tracked the school mobility of students after 23 DCPS schools
were closed or consolidated in school year 2008-2009, we know that the residential
mobility rates from 2007-2008 to 2008-2009 ranged between 19 percent and 32 percent, a
significant share of the student body (see Table 1). Unfortunately, we do not have reasons
why the students have such high residential mobility rates – especially at the higher
grades. Reasons can vary from the head of household moving for positive and negative
reasons (ranging from loss of job or eviction to trading up to higher quality apartment) to
the child himself moving to another location to live with another parent, relative, or

[9] Schachter, Jason. 2004. "Geographic Mobility: 2002 to 2003." Washington, D.C.: US Census Bureau.
http://www.census.gov/prod/2004pubs/p20-549.pdf

[10] Rumberger, Russell W. 2003. "The Causes and Consequences of Student Mobility."
The Journal of Negro Education. 72(1):6-21.

family friends. The reasons for such high rates of mobility in the District deserve more in depth research.

Table 1: Residential Mobility of Students from Closed and Non-Closed Schools

	Students enrolled in public school (records matched), 2008-09	Number of students NOT at same home address 2007-08 and 2008-09	Percent of students not at same home address 2007-08 and 2008-09
Closed Schools: ALL	4,109	1,048	25.5%
Closed Schools: Elementary	3,164	818	25.9%
Closed Schools: Middle	696	155	22.3%
Closed Schools: Senior High	170	54	31.8%
Non-Closed Schools: ALL	35,169	6,820	19.4%
Non-Closed Schools: Elementary	21,864	4,302	19.7%
Non-Closed Schools: Middle	4,107	769	18.7%
Non-Closed Schools: Sr High	8,270	1,360	16.4%

Source: Analysis of the Impact of DCPS School Closings for SY2008-2009 (21st Century School Fund, the Urban Institute, and the Brookings Institution). March 17, 2009.

Therefore, identifying the students affected by foreclosure can be a challenge when there are only one-point-in-time residential data.

D.C. has a complex school choice system, which will be important to understand during Phase II of the research study Over 30 percent of the public school students attend public charters, and more than half of all students who attend a traditional DCPS school attend a school outside of their catchment area. It is relatively easy for students to choose a public school other than their guaranteed neighborhood school. The Urban Institute and 21st Century School Fund analyzed students' school mobility – that is, whether students switch school before the last grade at the school was reached. In 2006-2007, the city average for "early exits" was 14 percent and rates varied by ward. In three of the eight wards, the share of students exiting early exceeded the overall city average of 14 percent, with the highest early exit rate in Ward 5 (18 percent) followed closely by Wards 7 and 8 (17 percent each). Ward 3 had the lowest early exit rate of all the wards at 5 percent.[11]

The following sections of the memo describe the research questions and analysis plans for Phase I and II of the study.

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[11] Information provided from Quality Schools, Healthy Neighborhoods: A Research Report, by Urban Institute, 21st Century School Fund, and the Brookings Institution (2008).

Phase I

Research Questions
- How many public school children affected by the foreclosure crisis in Washington, DC? Has the number changed over time?
- What are the social and demographic characteristics of the school children being affected by foreclosure (race/ethnicity, grade, free/reduced price lunch, LEP/NEP)? Have they changed over time?
- Where do these school children live? Are they clustered in specific neighborhoods?
- Are these students clustered in particular schools?

Analytic Work
Data sets. In order to answer the Phase I research questions, we will use the following data sets about public school students and foreclosure data.

Public school student data. The student-level data are from the District of Columbia Public School (DCPS) for the traditional public school enrollments and the DC Public Charter School Board Authority for the charter school students. The student data are a snapshot (point-in-time) from the official October count of each year. (These are pre-audited data, as the audited data are not available until December (or later) of each year and the audited data do not include student addresses.)
- The student-level data include the following variables: grade, age, race/ethnicity, free and reduced price lunch status, Limited English Language/No English Language (LEP/NEP), special education status, address of residence, name of enrolled school.
  - Free and reduced price lunch is a notoriously unreliable variable, especially at the senior high level, because DCPS does not have a standard method of collecting the information. They rely on the principal who may either directly contact the students or fill out the forms for the students and submit them.
  - Age is also a questionable variable. We tend to rely on the grade variable more.
- Urban merged onto each student record the geocoded school address and characteristics (e.g., test scores, facilities) from a separately maintained school-level dataset.
- DCPS and the Public Charter School Board Authority provided the October snapshots for SY2003-04 through SY2008-09. The datasets are not linked across time.

- Urban Institute geocoded using an in-house NIDC-developed system the student's residence for each school year and assigned the appropriate parcel number (suffix/lot number) to each student.
- Limitations:
  - Student level data includes just one address for the student for each year – October of that year. The student's residence is inputted during every registration period for the upcoming school year. However, there have been some discussions with DCPS that questions whether the addresses actually get updated every year.
  - Not all geocoded residences are being assigned a corresponding parcel number – we're checking into this. (We've discovered no obvious geographic bias.)

Foreclosure data. We were able to track several of the key steps in the foreclosure process and report on the incidence and trends in foreclosure activity in the city using the following two data sources: notices of foreclosure sale and trustee deed sales, and real property records. Notices of foreclosure sale and trustee deed sales are from the D.C. Recorder of Deeds (ROD). These data allow us to track foreclosure starts and completions. Real property records are from the D.C. Office of Tax and Revenue (obtained through the DC GIS Data Clearinghouse/Catalog). By matching the real property data to the ROD records, we can determine the type and location of properties in foreclosure, track sales or other transfers of properties, and classify residential properties as renter- or owner-occupied. Because the real property sales data are more complete after 1998, the foreclosure dataset includes foreclosures that originated in 1999 up until the end of 2008.

Using this merged data set, we are able to have unduplicated foreclosure notices for properties by the following structure types (limited to residential properties):

  - Residential, single-family home
  - Residential, condo
  - Residential, cooperative
  - Residential, rental apartment building

By matching the foreclosure notice data to trustee deed records and property sales records, the Urban Institute has created a file with records for each foreclosure "episode" (property/notice period) and assigned an outcome for the property that received a notice of foreclosure. The following lists the outcomes and how they are defined.
  - 1-In foreclosure

- Owner is currently still in foreclosure process, and it cannot yet be determined whether they avoided foreclosure
- The date of the last notice received must be less than a year before the end date of the dataset (1/1/2009)
  - o 2-Property sold, foreclosed
    - Owner was foreclosed upon and a trustee deed was issued.
    - Considered to be real estate owned (REO) if owner after sale is a bank, mortgage company, or a government-sponsored enterprise
  - o 3-Property sold, distressed sale
    - Owner sold property within a year of the last notice
    - Property was transferred to a bank, mortgage company, or GSE, possibly as a deed in lieu of foreclosure
    - There is no way to know from administrative data whether owners were selling at a time of their choosing, had to sell because they could no longer afford their mortgage, or entered into short sales to avoid foreclosure. These property owners may indeed be better off because a foreclosure will not appear on their credit record, but they and their families or tenants may still suffer the disruptions that moving causes as well as a loss of wealth and a vehicle for asset-building over the long term..
  - o 4-Property sold, foreclosure avoided
    - These are properties with no sale or trustee deed within a year of the last notice of foreclosure
    - Owner did not sell the property under duress and was not foreclosed upon
  - o 5-No sale, foreclosure avoided
    - Owner that received notice of foreclosure still remains the owner of the property more than a year after receiving the notice
  - o 6-Cancellation
    - Notice received by owner was cancelled.
    - Cancellations do not always appear when an auction is cancelled, and if there were multiple notices issued by multiple grantors only one of them may have been cancelled.

The properties with foreclosure outcomes (2-5) should have a corresponding first notice date (date of which the first foreclosure notice was recorded) and outcome date (or the date of which the outcome was recorded).

The range of days that property owners spend moving through the foreclosure process varies widely. On average the length of time between the last notice and an outcome for owners who received multiple notices is 253 days, though for owners who only received one notice the average length of time was 580 days. Due to this wide range, we assume that setting the end of the foreclosure process a year after the last notice date captures most of the owners who have avoided foreclosure.

- o Because of our decision to use one year as the standard length for the process, properties in the foreclosure process (outcome 1) receiving notices less than a year before the reference date (1/1/2009) would not have an outcome date yet.
- Limitations of the data:
  - o Challenges constructing the outcome variable
  - o Length of time until completion, much longer than the 3 months – UI created decision rule of up to 1 year
  - o There is inconsistency in the administrative processing among the Recorder of Deeds and the Office of Tax and Revenue, so not all trustee deeds can be matched back to notices and vice versa.

Merged student and foreclosure dataset. In order to answer the phase I research questions, Urban Institute matched the foreclosure data to the student-level data using the following criteria:

1) Matched the foreclosure data to the student data by parcel (or at property level)
- This created a new student-level data set with corresponding information about whether the property the student lived in had ever been through foreclosure. However, it does not reveal whether the student lived there during the foreclosure process.

2) To determine if the student lived in the property during the time the property was undergoing foreclosure, we flag the student as living in a foreclosed property if:
- If the student with a matching foreclosure lived in the parcel between the time of the first foreclosure notice and the outcome date, then the student is flagged as living there during foreclosure process
- Below are two illustrative examples showing two different periods of time:

Example 1: Public School Student Affected by Foreclosure

```
    ╭─────────╮                                              ╭─────────╮
    │   1st   │                                              │  Final  │
    │Foreclosure│     ┌──────────────┐                       │Foreclosure│
    │ Notice  │       │Public student│                       │ Outcome │
    ╰─────────╯       │      X       │                       ╰─────────╯
         │            └──────────────┘                            │
◄────────┼──────────────────┼─────────────────────────────────────┼────────►
         │                  │                                     │
      August             October                                July
       2007                2007                                 2008
```
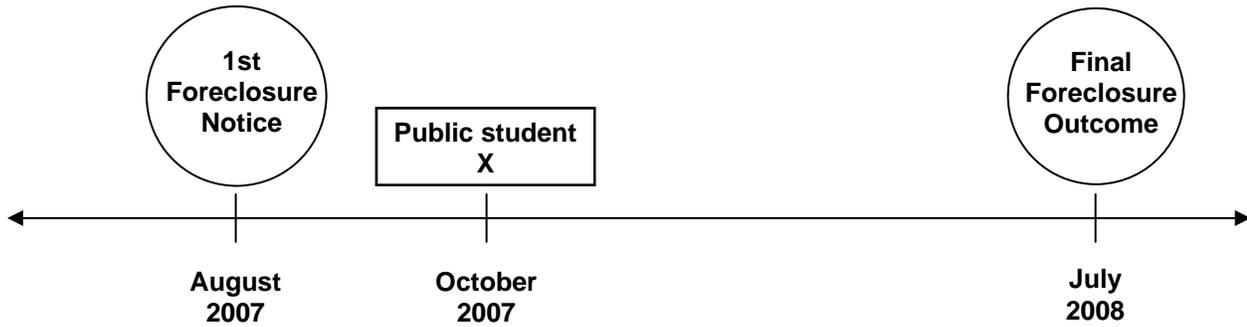
Example 2: Public School Student Affected by Foreclosure

```
    ╭─────────╮                                              ╭─────────╮
    │   1st   │                                              │  Final  │
    │Foreclosure│                    ┌──────────────┐        │Foreclosure│
    │ Notice  │                      │Public student│        │ Outcome │
    ╰─────────╯                      │      X       │        ╰─────────╯
         │                           └──────────────┘              │
◄────────┼──────────────────────────────────┼──────────────────────┼────────►
         │                                   │                     │
      January                             October                 Dec
       2006                                2006                   2006
```
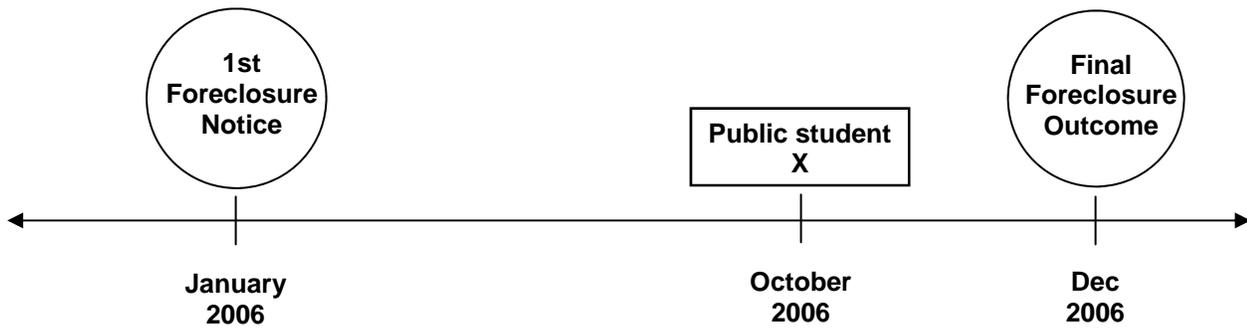
3) Solutions for missing first notice or outcome dates
- If a student with a matched foreclosure was missing an outcome classification and date, then we created an outcome date using "lastnotice_date + 365 days, and check to see if the student lived in the property between the first notice date and constructed last notice date.
- If student with a matched foreclosure was missing a classification outcome and first notice date, then we created a first notice date taking the outcome date – 365 days.
- Limitations to identifying students affected by foreclosure relying on student residing in property between first notice and outcome within one year
  - Low-income residents are highly mobile and the school data are limited in that we have only address for the student based in October of each year. However, this method of identifying students by whether they resided in the property at some point during the foreclosure process is conservative and seemingly reliable, particularly for children in homeowner families.

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- The foreclosure first notice and outcomes captures the activity that occurs to each parcel within a specific period of time. If the student resided in that parcel during that period of time, then the student was affected by foreclosure.

- The children in rental families is more challenging because they are not directly affected by the foreclosure notices and outcomes (i.e., the landlord is). Therefore, in theory, the student could have moved into a parcel that was undergoing foreclosure and may have moved out or have been evicted before the foreclosure process is completed – however the child was still affected by foreclosure.

- This method does miss those homeowner students who live in a parcel as of the October date, were subsequently three months late in mortgage payments, then received a foreclosure notice 4 months **after** the October student residential date, and the foreclosure process ended before October of the following year (or the next round of student data). Therefore, we will also explore the following identification criteria:
  - If the student with a matching foreclosure lived in the parcel as of the Oct date, the first notice was received 3 to 4 months after the student was identified as living in the parcel (January or February of the following year), and the outcome date was before the following October student date, we will flag those students as potentially affected by foreclosure.
  - This method is less stringent but better identify those students who were affected by foreclosure post the Oct data and were able to settle the process before one year. This will be especially pertinent to families affected by foreclosure during the housing boom of 2005 and 2006, when families were able to quickly sell.

o   Below is an illustrative example

Example 3: Public School Student Affected by Foreclosure

```
        ┌──────────────┐    ╭─────────╮         ╭─────────╮   ┌──────────────┐
        │Public student│    │   1st   │         │  Final  │   │Public student│
        │      X       │    │Foreclosure│       │Foreclosure│ │      Y       │
        └──────────────┘    │ Notice  │         │ Outcome │   └──────────────┘
        │                   ╰─────────╯         ╰─────────╯                │
   ◄────┼────────────────────────┼───────────────────┼────────────────────┼────►
     October              January                   Sep              October
      2005                 2006                     2006               2006
```
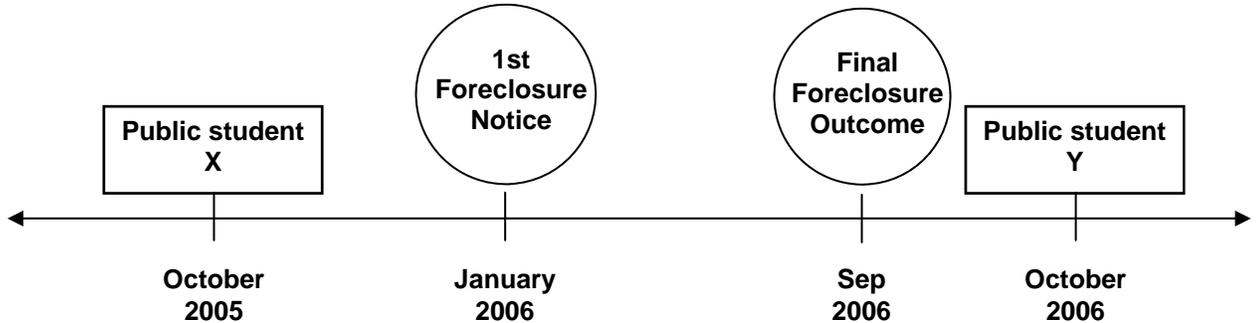
Analysis Plan

- We will first analyze the basic descriptions of the public school students affected by foreclosure (using the conservative method and more relaxed method)
    - Number/share of public school students affected by foreclosures for school years 2003-2004 and 2007-2008. This will allow us to compare results to New York and Baltimore. However, if there is time, we will analyze the characteristics of students from 2004-2005 through 2006-2007 as well.
        - Analysis of foreclosure outcomes (first notice only, presale, foreclosed, distressed sale, etc)
        - Identify trends
    - Characteristics of affected students from school years 2003-2004 and 2007-2008. (We will analyze other available school years is time allows.)
        - Race, grade, free/reduced price lunch, special ed, ELL/LEP, DCPS or public charter, renter or owner occupied
        - Identify trends
        - Any difference across foreclosure outcomes? Especially renter vs homeowner
        - Do these average characteristics differ from non-foreclosed students?
    - Geographic/neighborhood analysis of affected students from school years 2003-2004 and 2007-2008. (We will analyze other available school years is time allows.)

- Are students concentrated in particular wards, neighborhood clusters
  - o Identify trends
  - o Any difference across foreclosure outcomes?
  - o Look at characteristics by ward – are some more likely to differ by race? Renter or owner occupied?
- School analysis of affected students from school years 2003-2004 and 2007-2008. (We will analyze other available school years is time allows.)
  - o Are students concentrated in DCPS versus charters, in specific schools?
  - o Identify trends
  - o Any difference across foreclosure outcomes?
  - o If there is a concentration in specific schools, what are the characteristics of the schools
    - Location, average test score, other

Phase II: Students experiencing foreclosures versus ones not experiencing foreclosure, pre and post

Research Questions
- Did students affected by foreclosure switch schools post foreclosure outcome?
- Did students affected by foreclosure move from the original property post foreclosure outcome (particularly focusing on renters)?
- Did students affected by foreclosure and moved remain in their same neighborhood post foreclosure outcome?
- What neighborhoods did foreclosed students move to post foreclosure? What were their characteristics? How did they differ from the previous neighborhood?
- What schools did foreclosed students enroll in post foreclosure? What are their characteristics? How did they differ from the previous school?

Analytic Work
Data sets. In order to answer the Phase II research questions, we will use the following data sets about public school students, foreclosure data, and neighborhood and school characteristics.

Public school student data. We will be using the same student-level Oct official count data described in Phase I. However, we had the following data matched over time by the Office of the State Superintendent of Education and the Office of the Chief Technology Officer: SY2003-04 to SY2004-05, SY2004-05 to SY2005-06, SY2005-06 to SY2006-

07, SY2006-07 to SY2007-08, and SY2007-08 to SY2008-09. The data files include all matches that occur within the public school system; that is, if a student switches between DCPS and public charters, they are matched in the data file. If a student leaves the public school system (i.e., drops out, enrolls in independent or parochial schools, or moves), he/she is not included in the data.

- Limitations
    - There are significant challenges when matching the public students over time. First, the unique student identifier was particularly unreliable in earlier years. OSSE, DCPS and PCSB have made significant improvements but matching on unique ID alone is not sufficient. (We have had to rely on additional characteristics to match on such as name, race, age.) In addition, public charter enrollment has significantly increased and they were assigning their own unique IDs to students without relying on their former ID. This has been improved as well but we need to be careful with earlier data sets.

Foreclosure data. We are using the same foreclosure data as described in Phase I.

Neighborhood characteristics data. We will use data compiled through NeighborhoodInfo DC to characterize the neighborhoods where students lived. We have local administrative data as well as federal data sets disaggregated at the neighborhood cluster and census tract level over time. Neighborhood-level and census tract data included in our data warehouse are American Community Survey micro-level data (IPUMS), crime data, teenage births, HMDA, real property, and TANF and food stamp data.

School characteristics data. To characterize the schools that students attend pre- and post-foreclosure, we will use our aggregated school-level file created from the student-level data. The school level file will have the demographics of the school (share of students by race/ethnicity, free and reduced price lunch, LEP/NEP), as well as public charter schools or DCPS designation, the location of the school (so we can calculate distance between the student and school), pedagogical characteristics (traditional, alternative, or specialty school determined from our local knowledge), and average DCCAS test scores.

Merged matched student, foreclosure, neighborhood and school dataset. In order to answer the phase II research questions, Urban Institute will match the foreclosure data to the most recent two-year matched student-level data (SY2007-08 to SY2008-09) using the criteria developed in Phase I. In addition, Urban will take the census tract of the

students and schools (pre and post foreclosure) and merge on the neighborhood and school characteristic data.

Depending on the time and resources available, Urban may try to merge the earliest student level data (SY2003-04 to SY2004-05) to the foreclosure, neighborhood, and school characteristics data to conduct similar results. We choose the earliest years of data because we know that the number of foreclosures dramatically declined during the housing market peak of 2005 and 2006.

Analysis Plan
- Relying on the most recent two-year matched student data set with foreclosure outcomes, we will identify those students who were affected by foreclosure the first year of the matched data set and determine if they moved residences the second year. We will do this by comparing the x/y coordinates or parcel code of the first and second year (allowing us to avoid the problem of the address being recorded slightly differently).
    - We will analyze the students who moved by demographics, foreclosure outcome (using the conservative method and more relaxed method), homeowner vs renter, and ward of original residence
        - Identify trends
    - We will also analyze all students who were not affected by foreclosure and determine if they moved the second year. They will act as a comparison group.
        - We will analyze the students not affected by foreclosure but who moved/not moved by student demographics, ward of original residence, and homeowner vs renter. (We will have to determine if we can identify the tenure of the non-foreclosed students.)
        - Identify trends
    - For those foreclosed students that moved, we will compare the characteristics of the neighborhoods pre and post move
        - Such as poverty levels at the census tract (2000) and PUMAs (ACS 2005-2007), teenage births, crime data, HMDA (changes in mortgage price in the neighborhood, race of borrower), and TANF and food stamp data.
        - Identify trends

- o Do we need to do the same type of analysis for non-foreclosed students who moved??
- o Challenges:
  - This analysis will only capture those students that remain in the public school system and does not include students who have left altogether or whom the students couldn't be matched because of erroneous IDs
  - We will conduct some basic descriptive analysis of those students that were not able to be matched: how many, what schools they attended the first year (whether DCPS or public charter), their grade, race, LEP/NEP, free/reduced PL, where they lived
- Relying on the same two-year matched student data set with foreclosure outcomes, we will identify those students who were affected by foreclosure the first year of the matched data set and determine if they switched schools the second year.
  - o We will break the analysis into four student categories:
    - Foreclosed students who moved
    - Foreclosed student who did not move
    - Non-foreclosed students who moved
    - Non-foreclosed students who did not move
      - Although we need to decide if we have enough resources to conduct the school analysis for all four groups.
  - o For those foreclosed students who switched schools, we will compare the characteristics of the schools pre and post move
    - Average test score, distance traveled, demographics, type of school (DCPS vs public charter and typology of school).
    - We will break the analysis down into those foreclosed students who moved and who didn't move
  - o Challenges:
    - The schools are not always consistently named over time and many change location so it will take some cleaning to make sure the schools are uniformly named and flag those schools that also changed location, which may be a factor in whether a student decides to enroll there next year
    - Students who reach the final grade in the school are required to switch schools. Therefore, we will have to

identify the students who have reached their maximum grade at their school versus those who have not. The analysis will have to separate these two groups.

Stakeholders

Analysis plan review. We have informed a number of DC agency officials of our analysis plan. We met with Janice Telley-Melvin, director of Transitory Services, Visiting Instruction Services, and LEA Homeless Children & Youth Program at DCPS, and Charles White, State Director of Homeless Services at the Office of the State Superintendent of Education. Finally, we have a meeting scheduled with Chad Ferguson, Director of the Office of Youth Engagement at DCPS. We intend to periodically consult with these agency heads and keep them abreast of our findings. We also discussed our analysis plan with Mary Cunningham at the Urban Institute, who specializes in child and family homelessness and is familiar with the process of identification and homeless services available to students.

Findings review. Janice Telley-Melvin, director of Transitory Services, Visiting Instruction Services, and LEA Homeless Children & Youth Program at DCPS has already agreed to review and discuss our findings for Phase I and Phase II of the report. We plan on asking Chad Ferguson, Director of the Office of Youth Engagement at DCPS, to also act as a reviewer, as well as the agency representative of the Public Charter School Board Authority. Charles White will no longer be acting as state head for homeless services, so we will act his replacement.

In addition, we intend to ask Sue Marshall from the D.C. Community Partnership as well as Marian Siegel from the Housing Counseling Services to review our findings and brainstorm about policy implications. As before, we intend to keep Mary Cunningham at the Urban Institute brief of our findings, and she will also act as an advisor about policy implications.

Data Approval. Urban Institute has received approval from DCPS to use their student-level data for the OSI study. The Public Charter School Board Authority is having their legal counsel review the amendment to the MOA (our original agreement to the use the public charter data), and we expect that amendment to be signed soon.

Foreclosure and Public School Students
DC Data Diagnostic Memo
9/21/09

School Data

The dataset we use consists of student-level enrollment data obtained from District of Columbia
Public Schools (DCPS), the Board of Education (BOE) and Public Charter School Board (PCSB)
for the six school years beginning in the fall of 2003-2004. (BOE folded in 2007-08.) Data from
DCPS and BOE are from the Student Tracking and Report System (STARS) and PCSB data are
from individual files for each school in the system.

The data reflect the point-in-time enrollment patterns for the District's official count of students,
performed in the first week of October. Although OSSE provides audited numbers for their
October counts, these do not include students' residential addresses, so we use the pre-audited
files. A table with the date of each official count for each year of data is below.

School Year	Date of Official Count
SY 2003-04	10/7/2003
SY 2004-05	10/7/2004
SY 2005-06	10/5/2005
SY 2006-07	10/5/2006
SY 2007-08	10/5/2007
SY 2008-09	10/6/2008

Although the DCPS, BOE, and PCSB datasets come in different formats they still include the
same information, so we combine the datasets from the different systems into one student-level
dataset for all public school students in the District. This dataset identifies whether each student
attended a DCPS or public charter school, basic characteristics (i.e., race/ethnicity, age, grade
level, free/reduced price lunch, LEP/NEP, and special education), home address, and school
attended.

Using the students' residential address we geocoded the students in the total student file by
assigning the latitude and longitude or the parcel center of their address (Maryland State Plane
Coordinate System, North American Datum 1983 Meters). Besides the coordinate location of their
residence, geocoding also provides additional geographic information, such as their ward,
neighborhood cluster, census tract, and parcel, thus allowing us to link their geographic residence
to geographic characteristics, such as sales prices and neighborhood poverty. Some of the
students in the total student file for each school year have residential addresses outside the
District, so these are not included in analyses by ward or neighborhood. A similar geocoding
process is performed for the geographic location of each DCPS or PCSB school in the District.
While all schools geocoded successfully, the table below shows the number of students in each
year of data, as well as the geocoding success rates.

	SY2003-04	SY2004-05	SY2005-06	SY2006-07	SY2007-08	SY2008-09
Total students	77,936	77,277	77,272	74,032	73,287	73,180
Number Geocoded	74,152	75,337	74,668	73,488	70,930	70,885
Share Geocoded	95%	97%	97%	99%	97%	97%

Using the geocoded addresses of both students and schools, as well as shape files from the District's Office of the Chief Technology Officer (OCTO) for each elementary, junior high, and senior high school boundary, we used GIS to assign each student their neighborhood school-of-right, as well as identifying if the student attended their neighborhood school or not. We also calculated the straight-line distance between each student's residence and the school they attend.

Foreclosure Data

We use a publicly available dataset from the DC Recorder of Deeds at the parcel level to link students to homes in the foreclosure process. The dataset includes all residential parcels that received a first notice of foreclosure, with the same geographical characteristics as are available for the students, such as ward and neighborhood cluster as well as other characteristics of the property, such as whether the property is owner-occupied or rented. Apart from the geographical information about each property, the dataset includes the date of each notice, the date of the sale prior to the current owner, and the dates of any further notices of foreclosure. Single-family homes and individual units within condominium buildings are considered single parcels, but individual units within multi-family homes such as rental buildings are counted only as one parcel. The dataset is updated weekly.

Each property that received a first notice of foreclosure also is assigned an outcome and the date of the outcome. The outcomes range from the actual foreclosure and sale of the property to properties that are still in the process of foreclosure when the data was last updated. Properties can be included in the dataset more than once, if two separate owners undergo foreclosure processes. Of the 34,749 observations in the dataset, 6,483 were missing a date for the first notice of foreclosure but none were missing an outcome code. A table listing the possible outcomes and the share of properties with each outcome since 2002 is below.

Outcome	Year of End Outcome						
	2002	2003	2004	2005	2006	2007	2008
In foreclosure	2.3	2.4	2.7	3.9	11.1	19.2	52.3
Property sold, foreclosed, REO	9.4	0.4	0.9	0.6	2.2	7.5	6.6
Property sold, foreclosed, Other	19.0	3.5	5.2	9.2	11.3	10.1	14.9
Property sold, distressed sale, REO	7.7	11.4	6.5	11.5	2.6	9.1	3.9
Property sold, distressed sale, Other	37.4	48.6	47.0	36.4	36.2	28.1	7.8
Property sold, foreclosure avoided	12.9	18.5	17.3	13.4	8.6	3.2	0.3
No sale, foreclosure avoided	11.0	14.8	20.4	24.1	27.7	22.4	13.8
Cancellation	0.3	0.3	0.1	0.9	0.2	0.4	0.5
Total Count	1,509	1,398	1,317	1,161	856	1,500	3,813

Matching Students to Residential Parcels in Foreclosure

Matching foreclosure records to student in the student-level school file is done on the basis of parcels. While we had high rates of geocoding success, as shown above, not all successfully geocoded student addresses match a particular parcel. A table showing the number and share of successfully geocoded student addresses that were able to be matched with a parcel is below. We intend to explore whether we can increase the parcel match rate.

	SY2003	SY2004	SY2005	SY2006	SY2007	SY2008
Total Geocoded Students	74,152	75,337	74,668	73,488	70,930	70,885
Number with Parcel	66,287	67,138	66,968	64,956	63,596	63,374
Share with Parcel	89%	89%	90%	88%	90%	89%

To complete the match of students to parcels in foreclosure, we needed to ensure that the point-in-time observation that comprises the student-level data matched the particular parcel's foreclosure timeline. One more restrictive method is to consider as a match only those cases where the span of time between dates of a first notice and an outcome includes the date of the October school count. Using this method, the table below shows how many parcels in the foreclosure process included a student and how many students this affected.

	SY2003	SY2004	SY2005	SY2006	SY2007	SY2008
Parcels with DC public student	22,683	22,981	22,827	22,758	22,822	23,027
Parcels with foreclosure outcome	500	452	325	317	430	612
Students Affected	1,033	916	728	672	928	1,380

Other methods of matching students to foreclosures would be less restrictive and focus on realistic assumptions about the foreclosure process. In general, a borrower must be 90 or more

days delinquent on their loans before a foreclosure notice can be filed. Thus we can extend the timeframe in which we consider student-parcel combinations a match to three months before the first notice date. This can only be done for owner-occupied properties, since renters are not directly involved in the foreclosure process.