

# PLANNING POLICIES AND REGULATIONS THAT CAN REDUCE THE PRACTICE OF PRIVATE PROPERTY ABANDONMENT IN THE UNITED STATES: THE CASE FOR MICHIGAN

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## ABSTRACT

Many communities in the U.S. have suffered population loss and decline for several decades. This population loss and economic decline has resulted in widespread residential, industrial, and commercial abandonment. The pattern of abandonment that we see in many communities we contend is in a large part due to current land ownership policies that allow landowners to literally “walk away” from their privately held parcels and burden the public sector with the cost of blight removal. This flood of abandonment and subsequent blight has left communities with a large number of vacant properties and limited public resources to rehabilitate or commission deconstruction. This paper examines the feasibility of adopting public planning regulations that would require private sector entities to secure financial instruments (ie. insurance and guarantee bonds) on newly constructed commercial and industrial structures. These instruments would ensure that at the end of a structure’s useful life financial resources to fund the deconstruction of the structure would be available, thus ending the current practice of private property abandonment and alleviate the hardships placed on a community to finance the removal of blighted structures. These regulations have the potential to correct the inherent inequality and imbalance the current system of private property abandonment, by placing the cost of deconstruction on the owners/customers of a specific product or service rather than the general public. A variety of precedent setting policies and practices that seek to mitigate the cost of rehabilitation/abandonment of private sector structures and activities (mining, oil rigs, cell towers etc.) are examined. The research paper identifies current practices that use a system of financial assurance to ensure funding for deconstruction, their enabling legislation, their methods of operation, and concludes with policy recommendations that may be adopted to transform the current pattern of private property abandonment.

## INTRODUCTION

This report examines the feasibility of implementing policies that are likely to result in ending the practice of private sector property abandonment and the subsequent blight of abandoned properties. Specifically this research examines practices by the public sector to require financial assurance<sup>1</sup> through performance guarantee bonds or insurance, on newly constructed commercial and industrial structures. These financial instruments will ensure that at the end of a structure’s useful life there are available funds for dismantling, removal, and restoration, thus ending the cycle of private property abandonment in Michigan. The practice of “throwing away”

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<sup>1</sup> Financial assurance is used in this report to describe the use of performance bonds and/or insurance policies.

or abandoning parcels is a hazard to public health and safety, presents a real threat to the public welfare, and places an unsustainable burden on limited public resources (see Figure 1). A variety of different methods are examined to assess the feasibility of such a policy and the cost of the financial assurance. While this type of action would likely increase the cost of new construction, it will alleviate the financial cost placed on the community to fund the removal of blighted structures and correct the inherent inequity of the current system of private property abandonment. Several industries such as wind turbines, surface mining, cellular towers, landfills, rail companies, oil rigs, and pipelines use similar practices to ensure the safe removal/decommissioning of infrastructure at the end of their useful life. The act of requiring financial assurance on commercial and industrial encourages a more equitable system of true<sup>2</sup> product costs and property management.

## SOCIAL AND ECONOMIC CONSEQUENCES OF THE PRACTICE OF PRIVATE SECTOR PROPERTY ABANDONMENT

Figure 1. Current System of Abandonment



Many legacy cities in Michigan, have suffered population loss for several decades. Over the last 40 years these communities have experienced widespread residential, industrial, and commercial abandonment. This flood of abandonment and subsequent blight has left communities with a large number of vacant properties and limited public resources to rehabilitate or commission the dismantling and removal of the structures resulting in large areas of vacant private sector abandoned parcels.

This wide spread abandonment often sets in motion negative social and economic patterns that effect individuals and communities. This pattern of decline can lead to an increase in poverty and crime within the community and place unprecedented costs on public resources. George Galster discusses in Reality and Research, that one cause of poverty results “from the limited economic and social opportunities,” (Galster, 1995). The pattern of “walk away” abandonment that we observe in many Midwestern industrial communities has resulted in many communities with significant levels of limited social and economic opportunity, thus setting in motion the structural cycle of poverty described by Galster.

According to Myron Orfield areas of decline set in motion a series of reinforcing social and economic woes (Orfield, 1997). Orfield notes in Metro Politics: a Regional Agenda for Community and Stability, “Concentrated poverty multiplies the severity of problems faced by communities and poor individuals. As neighborhoods become dominated by joblessness, racial

<sup>2</sup> In this report the true cost refers to full-cost accounting or environmental cost accounting which is the “identification, evaluation, and allocation of conventional costs, environmental costs, and social costs to processes, products, activities, or budgets,” (Burritt & Schaltegger, 2007).

segregation, and single parentage, they become isolated from middle-class society and the private economy.” Communities with substantial abandonment have in most cases higher foreclosure rates, higher occurrence of crime, and higher unemployment rates (see Table 1). The current practice of private property abandonment results in neighborhoods where limited economic opportunity and a cycle of poverty become dominant.

**Table 1. The Effect of Foreclosures on Crime**

City	Foreclosure Rates 2008	Crime Index per 100,000 inhabitants 2008	Unemployment Rate 16 year and older 2008
<b>Detroit</b>	16.0%	1,832	20.4%
<b>Flint</b>	12.8%	5,530	18.5%
<b>Lansing</b>	9.3%	2,938	9.6%
<b>Grand Rapids</b>	8.0%	3,050	9.4%
<b>Ann Arbor</b>	4.1%	1,241	6.0%

Source: (USA.com, 2008), (US Department of Housing and Urban Development, 2008), (United States Census Bureau, 2008)

We also observe that private property abandonment places a substantial burden on limited public resources for the removal of blighted properties. It is estimated that the removal of an abandoned single family home costs approximately \$10,000 (Eggert, 2012). In some cities there are virtually hundreds of such abandoned parcels amounting to millions in blight removal cost. To aide communities in the fight against blight, in July of 2012 the Michigan State Legislature signed a \$25 million settlement to allocate funds for blight demolition with \$15 million for the city of Detroit and with the remaining \$10 million to be spread across Michigan (Eggert, 2012). State and local governments have also created a variety of taxpayer supported programs to combat commercial and industrial abandonment ranging from brownfield redevelopment tax credits to direct investments in failing industries. This financial burden on the tax paying public is both unsustainable and inequitable.

In an attempt to slow the increase of blighted properties in Michigan the State Senate has introduced a bill that could cause property owners to face incarceration if they fail to act on issued blight citations, the bill resides in the Senate Committee for Local Government as of April 18, 2013 (State Senate, Michigan, 2013). Local entities and statewide programs have also been enacted with goals of alleviating the effects of abandonment and blight. For example, the Department of Human Services of the State of Michigan (DHS), the Michigan State Housing Authority (MSHDA), and the Michigan Land Bank Fast Track Authority (MLB) enacted the Blight Elimination program in 2012 which gives communities the opportunity to apply for funding that fund the demolition of blighted properties (Michigan Department of Human Services, 2012). In addition, the Neighborhood Stabilization Program (NSP), administered by the Department of Housing and Urban Development (HUD) provides funding for communities to stabilize “that have suffered from foreclosures and abandonment” (U.S. Department of Housing and Urban Development). However, the NSP focuses on residential properties and not the large blighted private industrial and commercial structures.

It is undisputed that action needs to be taken to make improvements to the **currently** blighted properties; however, it is also critical that policies be set in motion that **end** the current practice of private property abandonment and the subsequent burden on tax payers with the removal of abandoned properties. A system of securing financial assurance on industrial and commercial buildings has the potential to accomplish this goal.

## THE CURRENT SITUATION FOR COMMERCIAL AND INDUSTRIAL PROPERTIES

The practice of abandonment in Michigan has been in place for many years. The decline of the auto industry and the economic recession has left Michigan with many large and unique structures without tenants. According to the Center for Automotive Research, over half of the originally constructed automotive plants within the State of Michigan have closed, leaving only 65 still in operation (Brugeman, et al., 2011). Commercial properties have also suffered from private sector abandonment with the difficulty of finding new tenants. The Michigan Land Bank Fast Track Authority has an estimated 271 vacant commercially zoned parcels in Wayne County alone (Michigan Land Bank Fast Track Authority, 2013). Many of the abandoned commercial properties have become sights for crime and vandalism.

### Industrial

The decline of the auto industry in Michigan has brought about widespread abandonment leaving communities with large blighted industrial structures. The industrial sites, if not repurposed, are costly to deconstruct. According a report prepared by the Center for Automotive Research, 267 automotive plants have closed across the country, almost 60 percent of the original 447 total plants constructed since 1979 (see Table 2) (Brugeman, et al., 2011). Of the 267 automotive plants some have been repurposed, some began manufacturing once again, and 135 remain closed (Brugeman, et al., 2011).

The closing of industrial sites has involved both urban and rural plants across the country. However, the repurposing of industrial sites has been more common at the rural plants leaving urban sites still abandoned. The work of professional companies such as Bierlein and North American Dismantling Corporation are usually employed to deconstruct the large industrial sites. Often, before the dismantling, removal, and restoration, industrial sites are purchased by RACER Trust who conducts environmental cleanup and prepares the sites to be, once again, placed on the market for sale. However, RACER Trust is unable to conduct environmental cleanup and deconstruction on all of the 105 closed facilities in Michigan. As of April, 2013 RACER had 89 industrial, commercial, and residential properties, and 59 of the 89 are in Michigan (RACER Trust, 2013).

**Table 2: Automotive and Autocaptive Plants (1979-2011)**

	United States	Michigan
<b>In Operation</b>	180	65
<b>Total Closed</b>	267	105
<i>Repurposed</i>	132	N/A
<i>Remain Closed</i>	135	N/A
<b>Total Plants Constructed</b>	447	170

Source: (Brugeman, et al., 2011)

Much of the research conducted on industrial parcels focuses on automotive plants and does not include other industrial uses, this does not mean, however, that the only manufacturing plants that are closing are automotive manufacturers. According to the Detroit Long Range Plan 22% of industrial zoned land in Detroit is vacant (Detroit Works Project, 2012). The United States and the State of Michigan have seen a decline in overall industrial and commercial activity over the last 40 years. The scale of industrial and commercial abandonment continues to grow as municipalities continue to lack the funding to address the issue of blight and dismantling, removal, and restoration.

## **Commercial**

Abandoned commercial properties in communities can pose a threat to public health and safety and occur in large and small communities throughout the State. These abandoned properties threaten public health and safety and negatively affect the aesthetics of the surrounding region deterring other businesses or developers from investing. It is estimated in Detroit, Michigan that 36% of commercial properties are vacant (Detroit Works Project, 2012).

Such wide scale commercial and industrial abandonment is also present in other core cities in Michigan. The decline of the past four decades has caused economic hardship for many private enterprises. The ongoing cycle of private property abandonment from decades of decline has littered cities throughout the State of Michigan and the United States as a whole. The capacity for local governments to address the perpetual cycle of abandonment is inadequate. The vast numbers of commercial and industrial structures scattered throughout Michigan have become a serious problem for the public sector, a sector whose resources are very limited.

### **SIMILAR PRACTICES IN ABANDONED PRIVATE PROPERTY FOR DISMANTLING, REMOVAL, AND RESTORATION**

Critical to the development of a public policy that can end the cycle of private sector abandonment is the examination of current practices that seek to eliminate abandonment particularly when this presents a public health and safety hazard. This section examines the preexisting practices that currently use varying systems of financial assurance to ensure funding for dismantling, removal, and restoration of private infrastructure. The practices listed in this section require that a private industry and its consumers bear the cost of monitoring, decommissioning, and/or dismantling, removal, and restoration of an abandoned property rather than the general taxpaying public.

## **Mining Reclamation**

Surface Mines can cause severe environmental damage and present a danger to public health in their surrounding areas if they are left unattended at the end of their productive life. The Surface Mining and Reclamation Act (SCMRA) was passed on August 3<sup>rd</sup> of 1977 with the goal “To provide for the cooperation between the Secretary of the Interior and the States with respect to the regulation of surface coal mining operations, and the acquisition and reclamation of abandoned mines, and for other purpose,” (Office of Surface Mining Reclamation and Enforcement, 2006). The SCMRA requires a fee from the mining company that will be used for the protection of the land and nearby water systems after the decommissioning of the mine.

Each calendar year, coalmine operators must submit statements that identify the amount of coal produced (Office of Surface Mining Reclamation and Enforcement, 2006). Some of the funds collected from the reclamation fee are placed into the Abandoned Mine Reclamation Fund to cover the cost of cleanup and closure of abandoned mines. The fee is 31.5 cents per ton of coal mined from a surface mine (Office of Surface Mining Reclamation and Enforcement, 2006). The addition of 31.5 cents per ton of coal mined is a small percentage of the average cost of a ton. The value of a ton of coal is dependent on the region of the United States in which the coal is mined. For example, the average spot price for a short ton of coal mined in Central Appalachia as of January 25<sup>th</sup>, 2013 is \$68.05 ranging to as low as \$10.15 in the Powder River Basin (Abandoned Mine Lands, n.d.). The average cost of a ton of coal from the 5 main mining regions in the United States is \$44.81. The addition of a 31.5 cents/ton fee for reclamation and closure ranges from approximately 0.5% - 3% of the total price of the coal at the point of sale.

The process of collecting reclamation fees based on mineral production has allowed the SMCRA to reclaim almost 240,000 acres of dangerous and high-priority surface mines and eliminate 315,000 acres that posed environmental threats and safety hazards (Abandoned Mine Lands, n.d.). The cost to reclaim the mines and eliminate safety hazards were covered by the reclamation fees and grants awarded to partner states. The SCMRA has awarded \$4.06 billion dollars in grants for the cleanup and reclamation of dangerous mines in 24 different states since its creation in 1977 (Abandoned Mine Lands, n.d.). While modest in mitigation the overall effects of mining operations show that the model of requiring a fee for industrial and commercial structures to prevent broad environmental and public health hazards can be developed and implemented.

### **Electricity generating wind turbines**

The demand for an increased use in renewable energy sources has caused wind turbines to appear in some communities. An issue that has arisen with the new construction of wind turbines is their deconstruction when the turbines are no longer in use. The typical height of an industrial wind turbine is 363 feet, including the fan blades, with an average lifespan of 20-30 years (National Wind, 2012). An idle wind turbine can be a matter of public safety due to the possibility of a tower that may collapse and endanger property and lives. Some communities, such as Gratiot County, Michigan are requiring that the wind turbine operators post a performance bond to ensure funds for the decommissioning on the wind turbines after their useful life (Gratiot County, 2009). The posting of the performance bond ensures that the operating company is responsible for the decommissioning of the wind turbines rather than placing the cost on the public sector. The Gratiot County ordinance states that after the removal of the electricity generating wind turbines the “land must be returned to its original state,” (Gratiot County, 2009). Gratiot County also addresses the question of how long a structure can be idle or unused until it is deemed appropriate for deconstruction. A period of 24 months is allowed before the wind turbines require removal by the owner (Gratiot County, 2009).

The cost of the deconstruction of a wind turbine is dependent on the specifics of the structure. At the issuance of the building permit for electricity generating wind turbines the company wishing to build must submit a specific plan for deconstruction. The average cost to construct a standard 363 feet, 2 megawatt wind turbine is \$4 million (National Wind, 2012). For a large wind farm the cost of construction for twenty to thirty wind turbines can be very costly. However, at the end of the useful life of the wind turbines the cost of deconstruction is very low in comparison to construction costs. For example, the Stony Creek Wind Farm in New York outlined the costs of deconstruction in their decommissioning plan that was necessary in order to receive the permit to build and their numbers show that the cost to deconstruct a single wind turbine would be \$17,494 (Invenergy LLC, 2010). The cost of deconstruction for a wind turbine is approximately 0.44% of the cost to construct the turbines. This practice can be used as a model for securing bonds on construction of industrial and commercial structures.

### **Landfills**

Through the Natural Resources and Environmental Protection Act of Michigan landfills are required to provide financial assurance through a perpetual care fund for their closure and monitoring for the 30 years after they cease operation. Landfills occupy large plots of land and must be monitored after their closure to prevent potential ground water contamination and other potential hazards to the surrounding environment. To ensure that there are adequate funds to monitor the landfill after its closure the State of Michigan has enacted legislation that requires landfills to pay a cash bond for the purposes of the post closure life of the site. The bonds are assessed by a per acre basis as well as by the category of landfill (State of Michigan, 1994).

The cash bond is placed into the landfill’s perpetual care fund that uses the money for the purposes of post-closure cleanup and monitoring. For a type II landfill, which contains nonhazardous materials such as home and office waste, the cost to be paid to the perpetual care fund is “75 cents for each ton of portion of a ton or 25 cents for each cubic yard or portion of a cubic yard of solid waste that is disposed of in the landfill.” (State of Michigan, 1994). This tipping fee secures a bond ensures that funds will be available for 30 years after the closure of the landfill to monitor the property for potential contamination.

### Oil Rigs

The Federal Government regulates the decommissioning of Off Shore Oil Rigs. If left unmonitored and in place after operations have ceased oil rigs can cause significant environmental damage to the surrounding ecosystem through leakages and crumbling foundations. To ensure the completion of the decommissioning process the United States Bureau of Safety and Environmental Enforcement requires the plan for decommissioning at the time of the initial Right-Of-Way or Right-Of-Use-and-Easement (U.S. Bureau of Safety and Environmental Enforcement, 2013). According to the U.S. Bureau of Safety and Environmental Enforcement (BSEE) there are about 2,996 production platforms located in the U.S. Outer Continental Shelf. The removal of the production platforms can be completed in two different methods: full removal and partial removal with the Rigs-to-Reefs program where the underwater portion is left in place, after closure methods have been taken, and remains as an artificial reef, however not all production platforms qualify for the Rigs-to-Reefs option. The BSEE has indicated that there are “813 platforms which fit the criteria of idle iron or are non-producing” (U.S. Bureau of Safety and Environmental Enforcement, 2013). Table 3 shows the total number of platforms removed each year since 2002 through the decommissioning regulation of the BSEE.

**Table 3. Number of Production Platforms Removed in the U.S. Outer Continental Shelf**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Removal Permits Approved	129	218	154	141	185	177	227	281	254	319	376	12
Platforms Removed	111	159	190	122	108	153	151	226	212	260	254	359**

\*\* Scheduled for Removal

Source: (U.S. Bureau of Safety and Environmental Enforcement, 2013)

The average number of oil rigs removed each year, over the course of the last ten years, is approximately 130 removals. The requirement of the BSEE for the oil rig operators to submit a plan for decommissioning at the time of the original lease agreement has proven successful for holding private enterprises accountable for the decommissioning of the production platforms.

### Cell Towers

Cellular Towers are another example of an infrastructure investment where the business must incorporate the cost of deconstruction into the business plan. Abandoned Cellular towers represent a clear public safety hazard. In order to ensure that unused cellular towers are not being abandoned and endanger public safety the Michigan Zoning Enabling Act of 2006 permits a performance bond to reclaim an abandoned tower. Communities in Michigan that are requiring performance guarantees include the City of Rockwood, Leroy Township, and Almena Township. These communities all require a bond to be secured with the local government entity for a minimum of \$75,000; this money is used to ensure faithful completion of the outlined ordinance as well as the returning of the site to its previous state (City of Rockwood, 2010). This practice is unique because it requires for the surety to remain in place the entire life of the cellular tower

not just during the construction phase. The bond requires that the company or individual who holds the permit for the tower be responsible for the structure for the entire duration that the tower is standing.

### **Trans-Alaska Pipeline System**

The Trans-Alaska Pipeline System (TAPS), often called the Alaskan Pipeline, is one of the largest pipeline systems in the world. The pipeline extends to the north and south of the State of Alaska. With the creation of a system for transportation of a finite resource there is concern for the future of the TAPS after its useful lifetime. The TAPS, along with other similar pipelines, crosses through many different jurisdictional boundaries and pose a threat to the environment and public safety if they are not removed. The requirements for the dismantling, removal, and restoration (DR&R) for the Trans-Alaska Pipeline System are outlined in the pipeline right-of-way grant and lease agreement with both the State and Federal governments (Fineberg / Research Associates, 2004). As a form of assurance for dismantling and removal the funds are collected through a pipeline tariff. Interstate commerce tariffs are regulated by the Federal Energy Regulatory Commission (FERC) and commerce within Alaska is regulated by the Regulatory Commission of Alaska (RCA) (Fineberg / Research Associates, 2004). The cost of the dismantling and removal is assessed by the RCA and the Army Corps of Engineers. As of 2004 the predicted dollars collected in tariffs for DR&R between 1977 and 2011 would total \$1.5657 billion (Fineberg / Research Associates, 2004). The assessment took into account the rate of inflation and earnings and taxes. This practice of requiring a tariff to be paid to ensure funding for DR&R protects the State of Alaska from carrying the burden of removal of the pipeline if it is to be abandoned.

### **Current Insurance Practices**

The practice of requiring individuals and private enterprises to purchase insurance can be seen for healthcare, properties within a floodplain, and automobiles. These practices of requiring individuals to carry specific insurance policies exist at both the State and Federal levels. In June of 2012 the Supreme Court ruled on the constitutionality of the Affordable Care Act. The Affordable Care Act requires that all persons have health care coverage (HealthCare.Gov, 2013). This practice is a measure to ensure that all citizens of the United States are able to receive adequate healthcare assistance. Also at the Federal level and a preventative measure for damages is the Federal requirement to purchase Flood Insurance if you build a structure in a flood plain. The National Flood Insurance Program was created in 1968 as a means to “help provide a means for property owners to financially protect themselves,” (FloodSmart.Gov, 2013). The practice of requiring floor insurance for property owners located in a flood plain prevents the practice of abandonment in the event of a flood by providing the funds for restoration of the damaged structure. A third form of insurance that has been made mandatory, but at the State level in Michigan, is the purchase of automobile insurance. Prior to the registration process for a vehicle it is required to purchase no-fault automobile insurance in Michigan (Department of State, 2013). Auto no-fault insurance does not cover damages to the vehicle, nor is collision coverage required under State law. The required coverage includes: “bodily injury/property damage (BI/PD), personal injury protection (PIP), and property protection insurance (PPI)” (Department of State, 2013). The practice of requiring insurance at the State and Federal level are intended to protect public health and welfare through ensuring adequate funding in the event of flood or accidents.

The practice of requiring bonds or insurance as a preventative measure to protect public health and welfare is seen at the Local, State, and Federal levels. The industries that already participate in a system that requires financial assurance for deconstruction are bearing the cost

and responsibility for deconstruction rather than general public. However, the examples listed above are all industries, which will after a specified period, cease operations due to the depletion of a resource or space limitations. The case for industrial and commercial structures alters slightly as their 'life' expectancy varies widely. All of the cited examples in this report reflect the principle that private individuals and industries should be responsible for the cost of deconstruction or restoration of their facility in the event of abandonment or accident and serve clear public health and welfare benefits.

## **STRATEGIES TO SUPPORT DISMANTLING, REMOVAL, AND RESTORATION**

Thus far we have argued that abandonment presents a public health and welfare hazard and that there are current policies across various industries that require a form of financial assurance to ensure adequate funding for deconstruction at the end of a structure's useful life. This section outlines two distinct strategies to support dismantling, removal, and restoration that are possible through the proposed system, insurance policies and bonds.

### **Insurance**

One method of ending the private sector practice of abandoning structures in communities is to require landowners to secure an insurance policy that provides for the removal of an abandoned structure. The insurance policy and subsequent premium would cover the cost of dismantling, removal, and restoration of a site.

Such policies are not without precedent. In various industries, such as the railway transportation industry, companies purchase an insurance policy on the land where they have businesses activity. The insurance covers the potential of environmental damages that may come from spills or other such incidents. Companies that produce these policies for industrial and commercial sites include: [XL Group](#), [AIG](#), [Zurich](#), and [Arcadis](#).

For example, XL group offers coverage that insures the performance guarantee for construction firms (XL Group, n.d.). The coverage offered by XL Group, *BuildSecure*, ensures the completion of a construction project for public private partnerships (XL Group, n.d.). This policy covers the complete construction period of the structure and also the safety of the construction agents and machinery malfunction.

The premium of a building lifecycle insurance policy of a specific structure is likely to be dependent on a number of factors including an assessment of the cost of dismantling, removal, and restoration. One factor that may reduce the cost of deconstruction is the use of recyclable materials and the nature of construction. The use of different materials and building practices may ease the process of deconstruction and thus lower the cost. Also, the use of recyclable materials allows the property owner to either reuse elsewhere, or sell the materials. Another factor that is likely to affect the cost of dismantling, removal, and restoration is the size of the building. The size of the building may impact the duration period of the deconstruction process as well as the workload involved for the deconstruction. The building use may also be a factor in the cost of deconstruction. If the building use poses high risk for environmental contamination or is located near other structures that may cause environmental harm and leak onto the property this may increase the cost of dismantling, removal, and restoration. These factors that could impact the assessment of the cost of dismantling, removal, and restoration vary for industrial and commercial structures but could be addressed to assess a fair and just cost.

## Bonding

The current practice in Michigan of performance guarantee bonds are primarily used during the construction period of the unit's lifetime and is only in place to ensure the completion of the construction and modification phases. However the application of this method for funding the dismantling, removal, and restoration of a structure may be reasonably extended under the Michigan Zoning Enabling Act which empowers local governments to protect the health and safety of the community. The practice of securing a bond could involve the developer securing a bond through a bonding company with the local government. This method provides that in the event of abandonment the local government funds from the bond to finance the dismantling, removal, and restoration. The cost of the bond would be assessed at the time of inspection by a bond assessor/consultant. The purchase of the bond could be required before for the issuance of the occupancy permit by the local government.

Industries are currently assessing the cost of the bond for deconstruction with two different methods, by commodity or by square feet of the structure. Industries such as oil and surface mining require a bond to be posted for closure and reclamation of the mine or rig based a rate per barrel or ton of the resource that is extracted, in the case of surface mining the collected funds are placed into a general fund to aid in the overall closure of surface mines across the country. Industries such as cell towers and wind turbines assess the cost of the bond by the square feet of the structure. For the purpose of applying bonds to commercial and industrial structures basing the bond on the square feet of the structure may be most feasible to accurately estimate the true cost of deconstructing a structure. Additional factors will probably need to be taken into account while assessing the cost of dismantling, removal, and restoration including; the use of environmentally safe, recyclable building materials, the construction practices used in construction of the building (modular vs. stick built), and on site materials and manufacturing equipment<sup>3</sup>.

This system does not imply that all structures must be deconstructed after the first occupant has left the premises or for some specific period of vacancy. In adopting a bonding policy a community may wish to allow a structure to remain vacant for a specified duration that would allow the property owner reasonable time to find new occupants. In the case of property sale the bond would transfer with the title of the property through the bonding agent and may wish to reassess the cost. This reassessment would provide for any changes, structural enhancements or modifications that may have been made. The bonding mechanism is intended to be available throughout the life of structures.

The two systems of financial assurance, insurance and bonding, could reduce the practice of private property abandonment in Michigan. The future practice of requiring financial assurance may be molded by the level of government at which this requirement would be mandated. The two strategies, while different in practice, could achieve the same purpose and goal of holding private property owners responsible for the dismantling, removal, and restoration of their industrial and commercial structures.

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<sup>3</sup> At this point the authors suggest that the system of requiring bonds for deconstruction not include the cost of environmental cleanup that may be associated with a particular use. This method of "separating" building uses for the deconstruction of a structure recognizes that over the life of a structure it may have many uses some of which may have more or less environmental liabilities.

### An Assessment of the Advantages and Disadvantages

In Table 4 we have conducted an analysis of the advantages and disadvantages of each method. We observe that the practice of requiring deconstruction could have the potential to encourage recycling and the use of recyclable materials, encourage redevelopment, and remove the burden of dismantling, removal, and restoration costs from the general tax paying public. While this proposed policy may stimulate a more sustainable system of construction and deconstruction it may also have negative consequences such as increasing the cost of construction, changing cost of construction materials and practice, increasing the price of a good/service or discourage redevelopment of currently abandoned properties. In conducting our due diligence in identifying the advantages and disadvantages of the proposed policy we seek to call the research community's attention to these potential impacts.

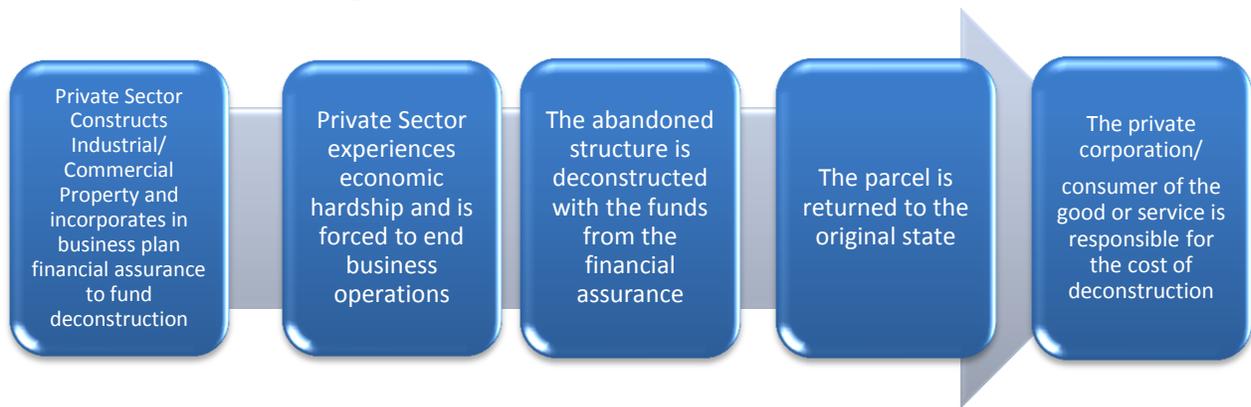
**Table 4. Potential Advantages and Disadvantages of Requiring Insurance for Dismantling, Removal, and Restoration**

Advantages	Disadvantages
It ensures the deconstruction of abandoned properties	May encourage low cost building practices
May encourage the use of recyclable/reusable materials	May increase the short-term cost of construction and price of the good or service
Places the burden and responsibility of deconstruction costs on the producer/consumer of the good or service produced in the facility	May discourage mixed-use structures
May promote a more sustainable system of construction and deconstruction	If enacted only at the local level it may discourage development in communities that require the assurance by increasing costs
If the assurance is only required for new construction it may encourage redevelopment of existing abandoned parcels	
If the assurance is required State wide all communities would be equally impacted	
May end the pattern of disinvestment in communities with high levels of abandonment	

### Future System of Property Abandonment

The application of the practice of requiring financial assurance will change the ability of a private industrial or commercial entity to abandon their property without carrying the responsibility of dismantling, removal, and restoration. This revised system places the burden of the cost of deconstruction on the producer or consumer of the good or service thus improving a products true cost price (Olewiler, 2012). Applying a system to ensure dismantling, removal, and restoration will create a more equitable process of development in communities. The following figure shows the future process of dismantling, removal, and restoration with the practice of requiring financial assurance for dismantling, removal, and restoration (see Figure 2).

**Figure 2. Future System of Deconstruction**



## POLICY FINDINGS AND RECOMMENDATIONS

An integral part of the research involved identifying policy practices that incorporate the cost of deconstructing abandoned facilities into the business model of private sector enterprises. We see from the analysis that developing and implementing policies and practices that incorporate dismantling, removal, and restoration are not without precedent in the United States. Such practices have the effect of protecting public health, safety, and welfare, ensuring that the burden of cost rest with the individuals with ownership responsible for the initiating activity and the consumers of the product and provide a reliable and predictable basis for business planning and true cost pricing.

Based on the research presented we have developed recommendations that can end the practice of private sector property abandonment of commercial and industrial properties in the United States. We recommend: 1) support for Federal and State legislation to require new commercial and industrial projects to carry dismantling, removal, and restoration insurance policies. This insurance would be required similar to health care, flood, and fire insurance. The basis for requiring insurance for dismantling, removal, and restoration argues that the practice of abandonment is a threat to public safety, health, and welfare. In 2012, the Supreme Court ruled on the constitutionality of the Affordable Care Act, deciding that it was within the limits of the constitution for the United States Federal Government to require that most American's carry health care and to levy a penalty on those who do not choose to carry a health care insurance policy. The Supreme Court decision to authorize the Affordable Care Act was justified by Congress's power to "levy taxes" (Liptak, 2012). The recommended policy for requiring insurance for dismantling, removal, and restoration follows the same basic principle.

Furthermore, we recommend the: 2) support for the development of a private sector industry to develop and market the insurance for dismantling, removal, and restoration to be implemented. If this policy is to be enacted it would open a new industry for an insurance company to carry dismantling, removal, and restoration insurance. There are currently a limited number of insurance companies that carry an insurance policy similar to this proposal. We recommend the creation of a private sector that carries insurance policies for dismantling, removal, and restoration. The Federal Government can provide minimum policy guidelines that could encourage this sector's development. An insurance pool to spread risk might also be considered.

## FURTHER RESEARCH

The content of this report identifies the core examples and policies needed to create a system that requires financial assurance for dismantling, removal, and restoration. However, there are several questions to be further investigated as they pertain to the practice of requiring financial assurance for the dismantling, removal, and restoration of abandoned structures.

- What are the implications of applying this policy to the dismantling, removal, and restoration of residential properties?
- What is the potential for application to existing structures, currently abandoned or occupied?
- Will this policy encourage developers to build using low cost methods and materials in an attempt to lower the future cost of dismantling, removal, and restoration or will it result in using materials that have an extended useful life, or both?
- What are the implications of this policy to a partially abandoned mixed use structure?
- Should the public and/or private insurance companies provide incentives to builders who use recyclable materials in construction?
- What will be the effect on consumer behavior? Are consumers more or less likely to patronize businesses that emphasize a building lifecycle policy? Will the market realize a “green” mark-up for the businesses that are committed to dismantling, removal, and restoration?
- What tools need to be developed to improve the accuracy of cost estimates in building deconstruction?
- What industries are likely to develop as a result of the process of deconstruction? How many jobs are they likely to create?
- What employee skills will be in demand in the deconstruction industry?

## CONCLUSION

Private property abandonment is widespread in many legacy cities. The practice can lead to social and economic decline that threaten the public health and welfare of communities. It is imperative that this cycle of abandonment be ended! The implementation of policies that lead to the dismantling, removal, and restoration of private property are necessary for a sustainable future.

This report examines the feasibility of establishing a private sector insurance program that provides for the cost of dismantling, removal, and restoration of abandoned properties while simultaneously creating a more equitable distribution of the cost of these activities. This policy provides businesses with some level of certainty in their business planning while providing a level of safety for the public at large. Without a fundamental change in our current “throw away” property practices the future of our State and Nation looks grim.

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