|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Activity | Population mean (min) | Doer  mean (min)\* | Activity | Population mean (min) | Doer  mean (min)\* |
| Sleeping | 504 | 506 | Child care | 18 | 79 |
| Working | 194 | 424 | Active sports | 16 | 88 |
| Electronic media | 143 | 184 | Outdoor recreation | 11 | 134 |
| Travel | 109 | 118 | Cultural events | 10 | 143 |
| Eating | 89 | 93 | Errands | 8 | 41 |
| Socializing | 56 | 115 | Car repair | 6 | 48 |
| Personal care | 50 | 58 | Hobbies | 5 | 114 |
| Reading/writing | 48 | 104 | Bars/lounges | 4 | 101 |
| Education | 46 | 237 | Animal care | 3 | 33 |
| Cooking | 38 | 73 | Singing/dancing | 3 | 106 |
| House cleaning | 34 | 87 | Other | 2 | 29 |
| Shopping | 25 | 66 | Dry cleaners | 1 | 73 |
| Yard work | 20 | 111 | Services | 1 | 83 |

|  |  |  |  |
| --- | --- | --- | --- |
| Code | Activity | Code | Activity |
| 11 | Agriculture, Forestry, Fishing & Hunting | 53 | Real Estate & Rental & Leasing |
| 21 | Mining | 54 | Professional, Scientific, and Technical Services |
| 22 | Utilities | 55 | Management of Companies and Enterprises |
| 23 | Construction | 56 | Administrative and Support and Waste Management and Remediation Services |
| 31-33 | Manufacturing | 61 | Educational Services |
| 42 | Wholesale Trade | 62 | Health Care and Social Assistance |
| 44-45 | Retail Trade | 71 | Arts, Entertainment, and Recreation |
| 48-49 | Transportation & Warehousing | 72 | Accommodation and Food Services |
| 51 | Information | 81 | Other Services  (except Public Administration) |
| 52 | Finance and Insurance | 92 | Public Administration |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Week 1 | | | | Week 2 and beyond | | | |
| Emer-gency Shelter | Temp-orary Shelter | Temp-orary Housing | Perm-anent Housing | Emer-gency Shelter | Temp-orary Shelter | Temp-orary Housing | Perm-anent Housing |
| Emergency  Shelter | .60 | .40 | .00 | .00 | .50 | .50 | .00 | .00 |
| Temporary  Shelter | .00 | .90 | .10 | .00 | .00 | .90 | .10 | .00 |
| Temporary  Housing | .00 | .00 | .95 | .05 | .00 | .00 | .95 | .05 |
| Permanent  Housing | .03 | .05 | .00 | .92 | .00 | .00 | .00 | 1.00 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Problem Perceived To Be Large | Anglo | Black | Hispanic | Total |
| Dealing with mortgage companies about insurance money | 68 | 49 | 68 | 64\* |
| Dealing with building inspectors | 52 | 38 | 76 | 63\* |
| Living in damaged home | 59 | 63 | 59 | 60 |
| Neighborhood conditions | 55 | 60 | 39 | 47\* |
| Living in temporary quarters | 45 | 61 | 38 | 46\* |
| Dealing with insurance companies | 33 | 26 | 48 | 40\* |
| Dealing with contractors | 38 | 18 | 45 | 37\* |
| Unemployment | 11 | 29 | 30 | 25\* |
| Household finances | 14 | 40 | 20 | 22\* |
| Neighborhood crime | 34 | 23 | 16 | 22\* |
| Transportation | 2 | 28 | 17 | 16\* |
| Job relocation | 7 | 21 | 17 | 15 |
| Dealing with agencies | 11 | 20 | 13 | 15 |
| Behavioral problems with children | 19 | 18 | 10 | 14 |
| Family violence | 17 | 11 | 5 | 9\* |
| Gain of member(s) | 14 | 0 | 4 | 5\* |
| Loss of member(s) | 4 | 0 | 13 | 4 |

ll decreases in sales after disaster impact and return quickly to their predisaster levels (Figure 11-7a). The second case consists of businesses that also are in the impact area, but have moderate vulnerability. Such businesses—large manufacturers, for example—experience a larger initial drop in their sales levels and their recovery takes a longer time (Figure 11-7b). Tourism oriented businesses may also suffer initial losses and take some time to recover to their prior level of profitability because they may be stigmatized in the aftermath of a disaster and can take several seasons to shed the image of danger and destruction.

By contrast, the third case consists of businesses that experience initial sales losses because they are inside (thus experiencing direct losses) or near (thus experiencing indirect losses) the impact area. However, they later experience an increase in demand for their products/services during disaster aftermath (Figure 11-7c). Recovery–related businesses in the building construction, construction materials, and hospitality (e.g., hotels and restaurants) industries exemplify a pattern in which an initial loss (e.g., due to minor damage or infrastructure disruption) is rapidly restored and followed by increased sales. The final case describes recovery related businesses that are just outside the impact area. Not only do they avoid any initial losses, but they also can take advantage of expanded demand in the disaster stricken community and reap gains in the aftermath of the disaster (Figure 11-7d).

Although the available data are limited, some of these principles are revealed in data from business recovery in two communities affected by Hurricane Andrew (Dash, et al., 1997). Homestead had a larger population, a higher per capita income, and a higher average home value than Florida City. Homestead was 42% Anglo and 35% Hispanic, whereas Florida City was 61% Black and 37% Hispanic. Even though Florida City is slightly farther from the point at which the hurricane eye made landfall, there was essentially no initial difference in the hurricane’s impact on the two city’s businesses. The overall commercial property loss after the hurricane was 29% in Homestead and 32% in Florida City. However, Table 11-5 describes the business impacts of the hurricane in terms of the changes in the number of businesses, number of employees, and sales volume in each of the industries operating in these cities.

Overall, there were significant differences in the two communities over the next year. For example, total sales volume declined 83% in Florida City but only 1.1% in Homestead. However, inspection of Table 11-5 reveals that there are distinct differences from one industry to another and the magnitude of the impact depends on whether one examines the change in the number of businesses, the number of employees, or sales volume. For example, Florida City shows dramatic declines for agriculture on all three indicators but no change or even modest increases in construction. By contrast, Homestead showed a slight increase in the number of agricultural businesses, but significant increases in the number of agricultural jobs and sales volume. Moreover, it experienced significant declines for all three indicators in construction—almost the opposite pattern of Florida City. These differences in business impacts indicate local authorities should carefully assess the businesses in their communities before a disaster strikes and monitor their economic viability in the disaster’s aftermath to determine if government intervention is needed.

# The Role of State and Federal Governments

State and federal agencies can play significant roles in disaster recovery, but the burden most frequently falls on local governments because only about 19% of all disasters receive state disaster declarations and 1% qualify for Presidential Disaster Declarations (PDDs)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Businesses Change (%) | | Employees Change (%) | | Sales Volume Change (%) | |
| Industry | Florida City | Homestead | Florida City | Homestead | Florida City | Homestead |
| Agriculture | -71 | +4 | -92 | +74 | -93 | +66 |
| Construction | 0 | -20 | +12 | -20 | +12 | -59 |
| Manufacturing | 0 | -12 | -67 | -19 | -59 | -32 |
| Transportation/  communication | -50 | +9 | -100 | +4 | -26 | +51 |
| Wholesale trade | -60 | -4 | -50 | +6 | -84 | +57 |
| Retail trade | -64 | -2 | -84 | +16 | -84 | -5 |
| Finance/  insurance/real estate | -20 | 0 | -59 | -1 | -32 | -32 |
| Business services | -63 | +6 | -94 | -5 | -65 | -14 |
| Professional services | -45 | -3 | -73 | +16 | -69 | +1 |
| Public administration | -50 | +38 | -69 | +7 | n/a\* | n/a\* |

|  |  |
| --- | --- |
| *Disaster Assessment* |  |
| Rapid assessment | Victims’ needs assessments |
| Preliminary damage assessment | “Lessons learned” |
| Site assessment |  |
| *Short Term Recovery* |  |
| Impact area security | Emergency demolition |
| Temporary shelter/housing | Repair permitting |
| Infrastructure restoration | Donations management |
| Debris management | Disaster assistance |
| *Long Term Reconstruction* |  |
| Hazard source control and area protection | Infrastructure resilience |
| Land use practices | Historic preservation |
| Building construction practices | Environmental recovery |
| Public health/mental health recovery | Disaster memorialization |
| Economic development |  |
| *Recovery Management* |  |
| Agency notification and mobilization | Public information |
| Mobilization of recovery facilities and equipment | Recovery legal authority and financing |
| Internal direction and control | Administrative and logistical support |
| External coordination | Documentation |

|  |  |
| --- | --- |
| Damage Assessment | Routine Construction Cost Estimation |
| Rapid Damage Assessment |  |
| Preliminary Damage Assessment |  |
| Site Assessment | Preliminary Cost Estimate |
|  | Detailed Cost Estimate |