



## National Voluntary Organizations Active in Disaster

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### CONSTRUCTION MANAGEMENT

Ratified by NVOAD  
Board Feb. 2020

Recovery Tools Workshop

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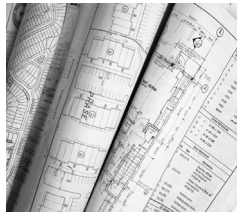
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### Construction Management

- Construction Management in Long Term Recovery consists of overseeing, repairing or rebuilding of client homes to a safe, sanitary, secure and functional condition.



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### Phases of Disaster

#### MITIGATION

Public Education  
Hazard & Vulnerability Assessment  
Improved Infrastructure

#### PREPAREDNESS

Emergency Response Plans  
Training & Exercises  
Sirens

#### RECOVERY

Economic Recovery  
Debris Management  
Housing  
Health & Social Services

#### RESPONSE

Life Safety  
Incident Stabilization  
Property Preservation  
Evacuation & Shelters  
Mass Care



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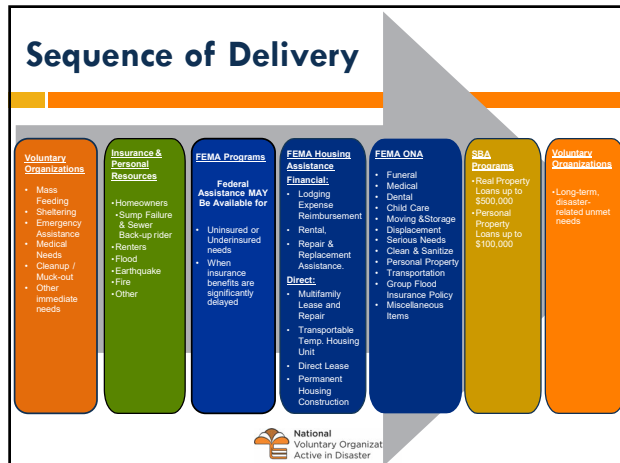
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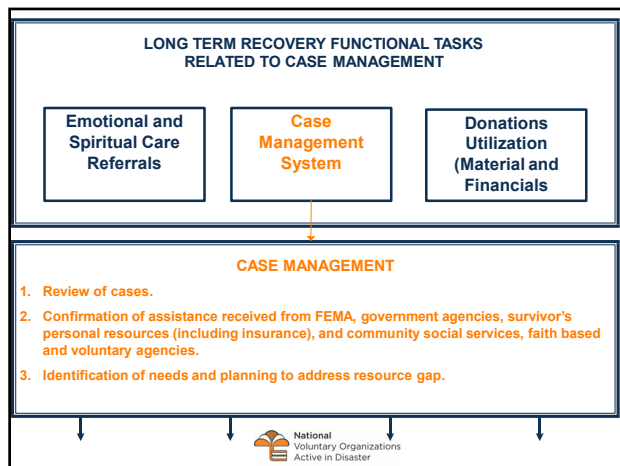
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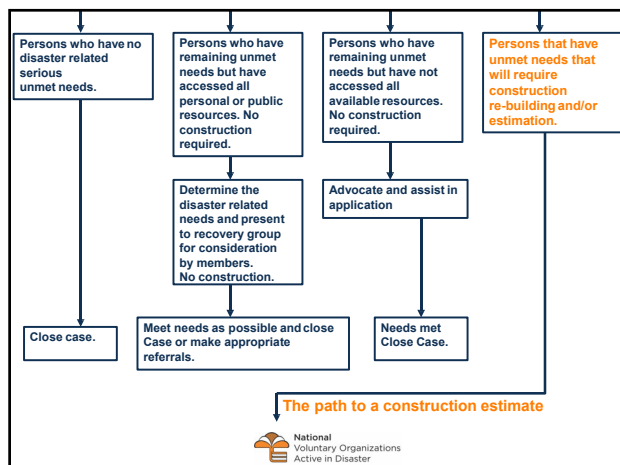
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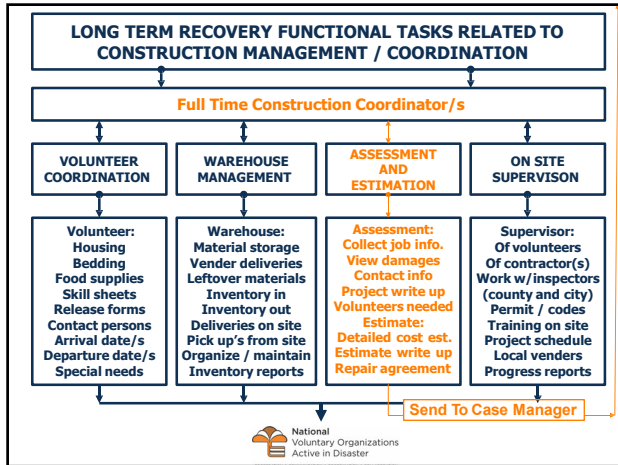
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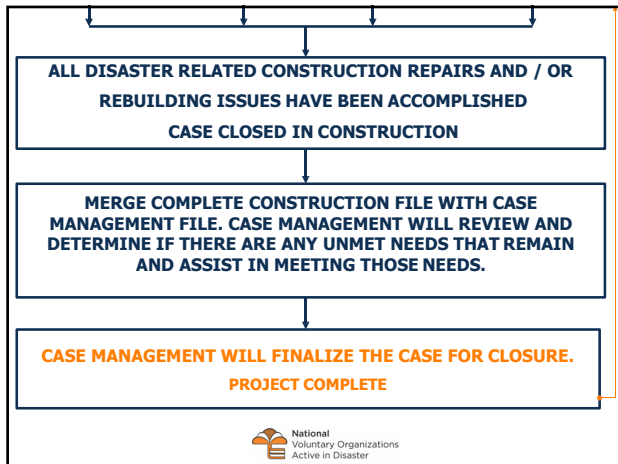
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**Clean Up, Repair and Rebuild** Ratified by Full Membership, October 2013  
POINTS OF CONSENSUS

National VOAD members agree to adhere to the following:

- Cleanup and long term recovery assistance will be provided with dignity and in a respectful, non-judgmental, and nondiscriminatory manner.
- Safety standards, including standards for handling of known hazardous materials, will be in place for field staff and volunteers prior to the start of work.
- Support and engage with the communication and coordination systems in use in each community and promote a central and inclusive system for intakes, referrals, tracking and reporting of cleanup assistance.
- Work will be done only upon written consent of the client. A clear scope of work will be agreed upon and signed before work begins.
- Clients and residents will be encouraged and permitted to salvage any items before and during cleanup work.
- Assist clients to repair and rebuild who have gone through a case management process consistent with the National VOAD Disaster Case Management Points of Consensus.
- Repairs and rebuilds will be done, at a minimum, in accordance with the International Residential Code and local codes, with local codes prevailing if there is a discrepancy between the two. We agree to aspire to the highest workmanship feasible. Members will encourage Long Term Recovery Groups to repair and rebuild above and beyond the International Residential Code and local codes. As a part of a larger commitment to our donors and the communities where we work we will adhere to the following guidelines:
  - Repair and rebuild with materials and practices that are energy efficient.
  - Mitigation practices will be used whenever possible to minimize the risk of future events.
- Repairs and rebuilds for disabled clients will be done in a way that gives the client needed access to the home. ADA standards, while not required under residential building code, should be considered and used whenever feasible.
- Skilled construction person(s) will be available to supervise all volunteer work and offer guidance throughout the long term recovery process.
- Local character of the client's community and cultural norms will be respected as they pertain to the repairing and rebuilding of the client's home. This may depend upon the resources available to the LTRG.

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## Cleanup Definitions and Practices

Document Resource [nvoad.org](http://nvoad.org)

- Highlights best practices and standard operating guidelines
- Addresses cleanup activities conducted by National VOAD organizations
- Improves coordination before, during and after cleanup activities.
- Creates a common foundation on
  - Standardized language
  - Definitions
  - Organizational accountability
- Creates greater
  - Efficiencies
  - Cohesiveness
  - Speed
  - Consistency



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## Many Types of Guidelines

- **Construction guidelines (repair/rebuilding)**
  - Main structures
    - Essential living space only
    - Deferred Maintenance
    - Out buildings/fencing
    - New Homes/Mobile homes
  - Hired professionals required
    - Electricians, plumbers, HVAC, engineers, legal
  - Material quality/grade
    - Suggest mid-grade products
  - Engineering requirements
- **Criteria guidelines**
  - Program requirements
- **Project Priority Guidelines**
  - Volunteer skillset may require some adjustment



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## Construction Management

- To create a successful operation, it is strongly advised to develop Construction Management concurrently with Case Management to avoid the dreaded bottleneck.



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## Building Codes

- **Codes are always changing**
  - International Residential Code (IRC)
  - Local code
  - Discrepancies between the two, use the highest standard
  - City and county codes can be different
- **Create a relationship with the local inspection office**
- **Restrictions: what a volunteer can or can not do (electrical, plumbing, HVAC etc.)**



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## Permits and Inspections

- Homeowner applies for their own permits
  - The homeowner acts as contractor
- If the LTRG applies for permits
  - The LTRG becomes the contractor
  - Is liable for all the activities related to the project
- All permits and inspections should be copied and placed in client's file



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## Contract Labor

- Professionals hired to do a specific project task
  - Always licensed with liability insurance
    - Electricians, plumbers, HVAC
  - Verify License and liability insurance
  - Document or copy
    - Insurance Certificate
    - Contract
      - Include specified material list
      - Including start and completion dates
    - Warranties
    - Permits



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## Defining Safety Issues

### Imminent Danger



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## Repair and Rebuilding Goal

### Creating an Environment for People to Return Home

**Safe**

**Sanitary**

**Secure**

**Functional**



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## Pre-Existing or Deferred Maintenance

- Reasons to address pre-existing conditions or deferred maintenance
- Zoning/Code Requirements
  - Must build back to code
- Safety Issues
  - Protect staff/volunteers
  - Protect client
- Return individual/household to a "Safe, Sanitary, Secure and Functional" environment



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## The 50% Rule

- **The 50% Rule or Substantial Damage Rule**
- *States a structure must be brought into compliance if damaged, by any cause, when the repair costs are 50% or more of the structure's value*
  - Electrical upgrade to code
  - Plumbing upgrade to code
  - HVAC upgrade to code
  - Current mitigation requirements



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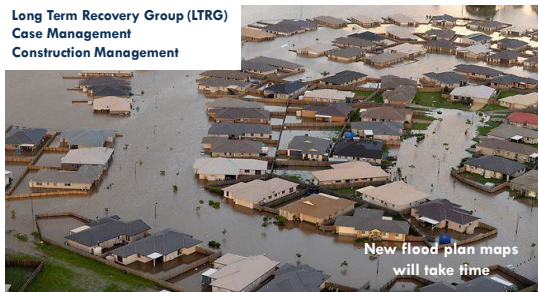
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## Flood Plains

Who Should Know the Rule

Long Term Recovery Group (LTRG)  
Case Management  
Construction Management



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## Mitigation

Mitigation is defined as an ongoing effort to reduce a disaster's effect on people and property by taking action to reduce or eliminate long-term risk from hazards and their effects.

**Examples of recommended mitigation practices are:**

- Increased wind speeds in coastal zones
- Fire resistance in areas of fire danger
- Earthquake resistance in seismic zones
- Flood elevation of homes



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<b>ASSESSMENT WORKSHEET</b>	
<b>ESTIMATOR:</b> Dale & Jean Percy	<b>DISASTER:</b> June '96 Flooding
<b>DATE:</b> 8/30/2006	<b>CASE #</b> 109069
<b>NAME:</b>	
<b>STREET ADDRESS:</b> 8443 Murray Rd	
<b>PRESENTLY AT:</b> 4785 E.84th	
<b>PHONE:</b> 555-255-8100	<b>Alt:</b> 555-341-7452
<b>NEEDS:</b> The family is unable to stay in this home and it also needs to be elevated, but before it they need to have the drywall hung. The family has worked very hard on the home so far and seems they will be able to continue working on the home and assistance from volunteers always a great blessing to the family. After the drywall is hung the family will need to complete the elevation process before any further work should be done. The movement of the home could crack any finishing that would be started. They understand the elevation/plumbing/electrical process. After the elevation has passed inspection then the drywall can be finished, painted, doors, trims and cabinets installed and finish with floor coverings.	
The exterior walls need to be insulated before the drywall is hung. In very few places in the house are the walls removed up to the ceiling. The insulation can be pushed up behind the remaining drywall. It can be a slow process, but the insulation can really assist the family.	
The hall bath has not been completely removed and this needs to be completed before the bath room is repaired. The kitchen has been torn out and will need to be "neatened up" before kitchen repair can be completed.	
<b>MATERIALS (ESTIMATE ONLY)</b>	
See attached.	<b>VOLUNTEERS NEEDED:</b> At this time: 1- Skilled drywall hangers per rm 2- helpers perm 3-4 general help (insulation) 2-4 general help (repair)
<b>FINANCIAL HELP NEEDED?</b> Yes	<b>ESTIMATED TIME:</b> 2-3 days

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## Statement of Understanding

- Important agreement
  - Between homeowner and LTRG
- Some volunteer groups may have their own
- Leave signed copy with homeowner
  - During project and completion

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**Taking Pictures of the Home**



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## Environmental and Health Hazards

- Contaminants in a damaged home, may include some or all of these:
  - Sewage
  - Mold
  - Gases or vapors
    - Carbon monoxide
    - Sewer gas
  - Bacteria or viruses - known and unknown types
  - Hazardous Materials
    - Lead
    - Asbestos
- **Recommend using licensed certified specialist when handling hazardous material**



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## Safety or Risk Management

- Safety policies must be developed before volunteers begin
- Protection for all associated with the project
- Orient/train youth and adults before going out



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## Common Safety Practices

- Personal safety equipment
- Age limits
  - Working with power tools
  - Working at heights
- Policies on "in the event of"
  - First Aid kits
  - Hospital/urgent care location
  - Emergency contact information



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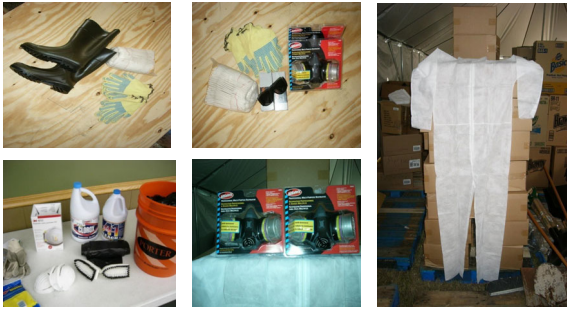
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### Keeping Yourself Protected



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### Stay Safe With Common Sense



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## Volunteer Age Limits

- How to determine volunteer age policy
  - Federal, state and/or local labor laws
    - May restrict what volunteers under the age of 18 can do such as using power and pneumatic tools, and working at heights
  - Youth volunteers need adequate skilled supervision
  - LTRG's capacity to provide supervision
    - Ensures volunteer safety
    - Quality workmanship and training
    - Verify insurance policy coverage



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## Liabilities and Insurance

- **Every volunteer and client should sign an appropriate Release of Liability form prior to starting work**
- **Liability Insurance** policy should be obtained and/or verified prior to volunteers working on a project. Providers could be:
  - Long Term Recovery Group (LTRG)
  - Organization or Agency
    - Some already carry insurance as part of their commitment
  - Individual volunteers supply their own coverage
  - Volunteer groups
    - May be a temporary policy as part of their "mission trip" planning
  - Spontaneous volunteers should be affiliated with a group that carries coverage, when they do not carry their own



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## Job Site Supervision

- **Case managed projects**
- **Meaningful work**
- **Be prepared**
  - Projects identified
  - Materials, tools and equipment
- **Project Supervisor**
  - Decision maker
  - Knowledgeable in construction
- **On site quickly**



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## Job Site Supervision For Skilled Volunteers

### □ Especially those volunteers from out of state

- State and Local Codes
- Safety compliance

### □ Materials

- How and where
  - To get building materials
  - To purchase/delivery materials

### □ Quality workmanship



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## Job Site Supervision Without Supervision

### □ Can cause unnecessary complications

- Poor workmanship
- Wasted time and material
- Misunderstanding scope of work
- Unsuccessful volunteer experience
- Lose credibility
- Accidents



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## Job Site Supervisor On site training

### □ Volunteers come:

- Skilled
- Semi-skilled
- Unskilled

### □ On-site training may be necessary at times



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## Project Boards

- **Project tracking**

- Project status
  - On hold
  - In progress
  - Project priority
- Funding source
- Assign Projects
  - Group information
- Project timeline
- Houses completed

Project Queue									
Project	Adm.	Owner	Start Date	End Date	Est.	Est. Cost	Est. Revenue	Est. Profit	Est. Risk
1071	Therapeutic Dr.	Dr. Smith	10/1/00	12/31/00	100	100000	150000	50000	Low
1072	Antibiotic	Dr. Jones	10/1/00	12/31/00	150	150000	200000	50000	Low
1073	Anti-Tumor	Dr. Lee	10/1/00	12/31/00	200	200000	250000	50000	Low
1074	Chem.	Dr. Kim	10/1/00	12/31/00	250	250000	300000	50000	Low
1075	Therapeutic Dr.	Dr. Brown	10/1/00	12/31/00	300	300000	350000	50000	Low
1076	Chem.	Dr. White	10/1/00	12/31/00	350	350000	400000	50000	Low
1077	Therapeutic Dr.	Dr. Green	10/1/00	12/31/00	400	400000	450000	50000	Low
1078	Chem.	Dr. Black	10/1/00	12/31/00	450	450000	500000	50000	Low
1079	Therapeutic Dr.	Dr. Red	10/1/00	12/31/00	500	500000	550000	50000	Low
1080	Chem.	Dr. Blue	10/1/00	12/31/00	550	550000	600000	50000	Low
1081	Therapeutic Dr.	Dr. Yellow	10/1/00	12/31/00	600	600000	650000	50000	Low
1082	Chem.	Dr. Purple	10/1/00	12/31/00	650	650000	700000	50000	Low
1083	Therapeutic Dr.	Dr. Grey	10/1/00	12/31/00	700	700000	750000	50000	Low
1084	Chem.	Dr. Brown	10/1/00	12/31/00	750	750000	800000	50000	Low
1085	Therapeutic Dr.	Dr. White	10/1/00	12/31/00	800	800000	850000	50000	Low
1086	Chem.	Dr. Green	10/1/00	12/31/00	850	850000	900000	50000	Low
1087	Therapeutic Dr.	Dr. Black	10/1/00	12/31/00	900	900000	950000	50000	Low
1088	Chem.	Dr. Red	10/1/00	12/31/00	950	950000	1000000	50000	Low
1089	Therapeutic Dr.	Dr. Blue	10/1/00	12/31/00	1000	1000000	1050000	50000	Low
1090	Chem.	Dr. Yellow	10/1/00	12/31/00	1050	1050000	1100000	50000	Low
1091	Therapeutic Dr.	Dr. Purple	10/1/00	12/31/00	1100	1100000	1150000	50000	Low
1092	Chem.	Dr. Grey	10/1/00	12/31/00	1150	1150000	1200000	50000	Low
1093	Therapeutic Dr.	Dr. Brown	10/1/00	12/31/00	1200	1200000	1250000	50000	Low
1094	Chem.	Dr. White	10/1/00	12/31/00	1250	1250000	1300000	50000	Low
1095	Therapeutic Dr.	Dr. Green	10/1/00	12/31/00	1300	1300000	1350000	50000	Low
1096	Chem.	Dr. Black	10/1/00	12/31/00	1350	1350000	1400000	50000	Low
1097	Therapeutic Dr.	Dr. Red	10/1/00	12/31/00	1400	1400000	1450000	50000	Low
1098	Chem.	Dr. Blue	10/1/00	12/31/00	1450	1450000	1500000	50000	Low
1099	Therapeutic Dr.	Dr. Yellow	10/1/00	12/31/00	1500	1500000	1550000	50000	Low
1100	Chem.	Dr. Purple	10/1/00	12/31/00	1550	1550000	1600000	50000	Low

The image shows a hand-drawn weekly planner for November 1997. The planner is divided into two main sections: 'H.M.S.' on the left and 'D.M.S.' on the right. The 'H.M.S.' section includes a vertical list of dates from 1 to 30, with some dates having small icons or notes. The 'D.M.S.' section is a grid with columns for 'Analgesic', 'Dox', 'Dyspareunia', and 'Menses'. Each column has a corresponding icon: a syringe for Analgesic, a pill for Dox, a flower for Dyspareunia, and a flower for Menses. The grid is filled with various colored sticky notes and markers, indicating a detailed schedule of medical treatments and observations.



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## Project Allocation and Cost Report

### Per Individual / Family

DATE	VENDOR	CLIENT	LTRG	LDR	Sal. Army \$2650.00
1/31/2005	Permit cost		\$81.00		
2/1/2005	Lowe's		\$200.23		
2/1/2005	Joe's Plumbing		\$728.23		
2/2/2005	Home Depot			\$28.97	
2/4/2005	Home Depot			\$35.46	
2/5/2005	Clean Glass		\$16.95		
2/7/2005	Lowe's		\$500.12		
2/10/2005	Quick Carpet Installer		\$1,200.58		
Totals		\$0.00	\$2,727.11	\$64.43	\$0.00
					Project Total \$2,791.54



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## Project Volunteer and Cost Tracking

Client ID	Estimated Cost	Allocated per Funder	Actual Cost per funder	Vol Hours by Org	Total Cost
CC1425-Gar	\$10,032.09	\$5,000.00 LTRG	\$4,893.21 LTRG	1251 UMCOR	\$9,925.21
		\$5,032.00 HO	\$5,032.00 HO	214 LDR	
1439-100062	\$2,512.13	\$2,512.13 LTRG	\$1,981.87 LTRG \$498.65 WH	914 WR	\$2,480.52
104002	\$28,946.75	\$5,000.00 LTRG	\$3,945.87 LTRG	200 LDR	\$26,208.65
		\$10,000.00 Govt Prog.	\$1,054.13 WH	1500 PDA	
		\$10,000.00 Sr. Prog.	\$9,987.23 Govt Prog	300 UMCOR	
		\$3,946.75 Unmet Need	\$8,798.23 SR. PR \$2,423.19 Unmet Need		
TC-306	\$1,425.13	\$1425.13 LTRG	\$1319.78 LTRG \$498.18 WH	314 LDR	\$1,817.96



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## Questions and Answers



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Thank you for your participation. For more  
information, contact your local leadership  
or National VOAD at [www.nvoad.org](http://www.nvoad.org).

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