

## **DPW – INFRASTRUCTURE SERVICES POTHOLE RESPONSE**

*February 2008*



### **Discussion Overview**

- Causes
- Prevention
- DPW Call Center Summary
- Reporting Pothole Locations
- DPW Staffing levels
- DPW Response
- Repair Procedures
- Materials Used
- Summary

## CAUSES

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### *MOISTURE*

- Moisture seeps into pavement joints and cracks
  - Joint edges deteriorate at surface
  - Moisture collects beneath the surface
  - Underlying base support of the pavement is weakened
  - Conditions accelerated by winter freeze-thaw cycles
  - Cycles this year are earlier and more often
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## CAUSES

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### *TRAFFIC*

- Over time traffic breaks the pavement in areas with weakened surfaces and base support
  - Pavement sections heave with frost
  - Plowing operations can impact broken areas and older repairs
  - Moisture collects in broken areas and seeps into base
  - Cycle repeats
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## **PREVENTION**

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- ❑ All streets experience cracking, joint failure and excavations during useful life
  - ❑ Surface deterioration addressed by minor repairs
  - ❑ Base protection is critical with effective maintenance strategies including crack filling, sealing and overlays
  - ❑ Maintenance program efforts increasing
  - ❑ Continued presence of potholes indicate pavement and base are beginning to fall and require remedial capital improvements
  - ❑ Pothole repairs only fix the isolated location and do not restore a deteriorating roadway
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## **DPW CALL CENTER SUMMARY**

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- ❑ Total 2006 reports = 10,763
  - ❑ Up 15% from previous year
  - ❑ Peak four months of March to June = 45-50% of annual total
  - ❑ January 2008 reports = 990
  - ❑ Up 45% from previous year
  - ❑ February reports to date = 414
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## REPORTING POTHOLES



- ❑ Most effective way to report a pothole; call the DPW Call Center **286-CITY**
- ❑ Location entered into the City's database
- ❑ Street supervisors review database twice a day and prioritize work based on safety hazards, conditions, traffic volume and location
- ❑ Crews are scheduled in areas to be efficient and minimize field travel between locations
- ❑ Motorists must remain alert and aware of changing roadway conditions, reduce speeds, and allow ample room for safe maneuvering if warranted

## DPW STAFFING LEVELS

### Winter Personnel 33 employees

- ❑ 2- Street Repair Dist Mgr.
- ❑ 3 - Street Operations Supr.
- ❑ 5 - Street Repair Supr.
- ❑ 6 - Infra. Repair Crew Ldr
- ❑ 8 - Infra. Repair Worker
- ❑ 9 - Cement Finisher Helper

\* - Results in 6 to 9 patching crews

### Summer Personnel 117 employees

- ❑ 2- Street Repair Dist Mgr.
- ❑ 3 - Street Operations Supr.
- ❑ 5 - Street Repair Supr.
- ❑ 16 - Infra. Repair Crew Ldr
- ❑ 43 - Infra. Repair Worker
- ❑ 7 - Cement Finisher
- ❑ 8 - Cement Finisher Helper
- ❑ 33 - City Laborer

\* - Results in 5 to 11 patching crews

## **DPW RESPONSE**

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- ❑ All available City street forces are out patching potholes throughout the City
  - ❑ Winter staffing level is intended to maintain average workloads
  - ❑ Average repair goal of two working days is unrealistic during this time of escalation and backlogs are expected
  - ❑ Crews are scheduled in areas to be efficient and minimize field travel between locations
  - ❑ Response is prioritized; arterials are completed prior to residential streets
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## **DPW RESPONSE**

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- ❑ The City has two self contained, single operator Road Patcher vehicles; however this vehicle can not be operated in freezing temperatures and is not put into service until spring
  - ❑ Typically seasonal crews are staffed beginning in mid-April to address this workload
  - ❑ This year, crews will begin to be called back two months early (mid-February) to assist in this increased response. Crew efforts will double
  - ❑ Additional crews will be added as weather improves; tentatively one month early (mid-March)
  - ❑ Special arrangements made for material
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## **REPAIR PROCEDURES**

- ❑ Late winter conditions are very challenging with areas damp, full of water, ice, or snow and adjacent pavement areas broken
- ❑ Areas are cleaned as best as possible
- ❑ Conditions do not allow the asphalt patch to adhere as well to the existing pavement and shallow repairs can break down
- ❑ Some repairs will include added base prep to assist in bonding adhesion
- ❑ Crews compact this material but area may slightly elevated or uneven
- ❑ New repair susceptible to snow plow damage

## **MATERIALS USED**

- ❑ Hot mix asphalt is not available in winter
- ❑ A winter mix of cold asphalt emulsion and stone is used
- ❑ Repair is considered temporary and will likely be replaced in summer with hot asphalt
- ❑ Local asphalt plants do not begin producing hot mix until late April
- ❑ Special arrangements made with a supply vendor for an early start-up of hot mix production in mid-March

## MATERIALS USED

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### Winter Patching

- Cold Mix Asphalt
  - \$78/ton
  - Available anytime
  - Stock piled and used when needed
  - Workable at low temperatures

### Summer patching

- Hot Mix Asphalt
    - \$37 to 46/ton
    - Available mid-April to late November
    - Delivered or picked up as it is produced
    - Placed hot and hardens as it cools
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## SUMMARY

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- Unusual weather conditions this year
  - Spring is coming; street conditions may likely get worse
  - DPW is responding two months early with increased personnel and equipment
  - Hot mix availability is one month early
  - Prioritizing repairs to arterials in interim
  - Preventative maintenance efforts increased
  - Report locations **286-CITY**
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