OREGON DEPARTMENT OF TRANSPORTATION TECHNICAL SERVICES

Traffic-Roadway Section **BULLETIN**

SUBJECT	FINAL NUMBER	EFFECTIVE DATE	VALIDATION DATE	SUPERSEDES or RESCINDS
2070 Traffic Signal Controller	TR08-01(B)	01/01/2009	06/01/2012	00/00/0000
	WEB LINK(S) http://www.oregon.gov/ODOT/HWY/TECHSERV/Pages/technicalguidance.aspx			
TOPIC/PROGRAM Traffic Signals	APPROVED SIGNATURE Original signed by: Bob Pappe, PE, PLS State Traffic Engineer			

PURPOSE

All traffic signal installation projects that include new controllers scheduled to be let for construction after January 1, 2009 will use 2070 controllers.

GUIDANCE

- **Design** – Standard bubble notes have been created for the new 2070 controller installations and are available on the web page below under the heading of "Drafting Tools": http://www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/signals.shtml. New special provisions have been created in 02925 to specify the 2070 in construction contracts. ODOT Special Provision 02925: http://www.oregon.gov/ODOT/HWY/SPECS/docs/08specials/02000/SP2925.doc
- **Operations** – Classes/training for the new Voyage software that will run on the 2070 are available by calling 503-986-3576.

DEFINITIONS

- **2070 controller** – A modular, multi-purpose, NEMA-compatible controller used for traffic control operations, with a real-time operating system (OS-9).
- **170E/HC11 controller** – A solid-state microprocessor-based logic traffic controller currently used in traffic signal installations.

BACKGROUND/REFERENCE

In 2006 ODOT commissioned a consultant to perform a statewide review of the traffic signal control system specification in Oregon. The purpose of this review was to document Oregon's needs and requirements for traffic signal control hardware and software, and to assist ODOT with a decision on how best to meet those needs in the coming years.

The recommendation of the consultant and decision of an ODOT taskforce in October 2006: Select new 2070 software and migrate to the model 2070 controller. This option best addresses the needs identified in the review while not requiring a major change in traffic signal cabinet hardware. ODOT will be gradually replacing existing 170 controllers with

2070 controllers as conditions require and resources allow. In the mean time we will continue to maintain the existing 170 infrastructure and deploy the 170E for ramp meters or other special applications as needed.

EXPLANATION

Benefits of the 2070 controller over the 170E/HC11:

- **Safety**
  - Truck extension: Ability to identify trucks, their speed, and extend time to clear the intersection.
  - Red clearance extension: Can dynamically extend the red clearance based on the presence of a late arriving vehicle.
- **Efficiency**
  - Flashing Left Turn Arrow: Simple programming for operation.
  - Preempt Recovery: Dynamically selects return phases based on the longest wait time.
  - Smart Return from Preempt: Reduces the impact of preempt in coordinated systems.
  - "Not Ped" Overlaps: Improved pedestrian protection with simple right turn signal display.
  - Phase re-service: Allows left turns to be serviced twice within the same cycle.
  - Transit Priority: Lengthens phase times for transit vehicles.
  - Split Variant: Split adjustment during coordination based on demand.
  - Proactive Plan Selection: Coordinated Plan selected by current demand.
  - Dynamic Phase Length: Adjustable phase max time by real-time approach demand.
  - Measure Of Efficiency Logs: Concise review of current operation for quick identification of problems.
  - Platoon Progression: Directional operation determines cycle length based on platoon size.
- **Communications**
  - Master/Local combined (currently two 170E controllers required)
  - Ethernet
  - N.T.C.I.P. compliance for compatibility with Central Signal Systems and I.T.S. devices.

RESPONSIBILITIES

- **Traffic Signal Designers** will include the 2070 in their designs that are scheduled to be let after January 1, 2009.
- **Traffic Signal Timers** will develop and implement timing plans using the Voyage software on the 2070 controller.
- **Traffic Signal Technicians & Electricians** will maintain the 2070 in the field.

STAKEHOLDERS PROVIDING REVIEW

Traffic Operations Leadership Team
ODOT Signal Timers Group
ODOT Region Electricians
Traffic Systems Services Unit

CONTACT INFORMATION

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