

SLIDE 1 – TITLE SLIDE

GOOD AFTERNOON, MR. CHAIRMAN AND MEMBERS OF THE BOARD. I AM PLEASED TO PRESENT THE RESULTS OF THE CALIFORNIA PORTABLE CLASSROOMS STUDY TODAY. ABOUT 1/3 OF ALL CLASSROOMS FOR KINDERGARTEN THROUGH 12TH-GRADE IN CALIFORNIA ARE PORTABLE CLASSROOMS. THIS TOTALS ABOUT 80 TO 85 THOUSAND PORTABLES STATEWIDE.

SLIDE 2 -- OUTLINE

FIRST, I WILL REVIEW THE BACKGROUND, PURPOSE, AND DESIGN OF THIS STUDY. THEN, I WILL PRESENT THE RESULTS FROM THE STUDY, AND FINALLY, I WILL REVIEW OUR RECOMMENDATIONS AND INDICATE OUR NEXT STEPS.

SLIDE 3 – BACKGROUND

AS YOU MAY RECALL, THIS STUDY WAS PROPOSED BY GOVERNOR DAVIS AND REQUIRED BY OUR LEGISLATURE IN THE FISCAL YEAR 2000—2001 BUDGET. THIS LEGISLATION WAS ENACTED IN RESPONSE TO A NUMBER OF CONCERNS RAISED BY THE PUBLIC, RESEARCHERS, AND VARIOUS INTEREST GROUPS.

THE MAIN CONCERNS INCLUDED INADEQUATE VENTILATION, HIGH FORMALDEHYDE AND OTHER GASEOUS POLLUTANT LEVELS, AND THE PRESENCE OF MOLD GROWTH.

THE STUDY WAS CONDUCTED JOINTLY BY THE ARB AND THE DEPARTMENT OF HEALTH SERVICES. RESEARCH TRIANGLE INSTITUTE, A NOT-FOR-PROFIT RESEARCH CONSULTING ORGANIZATION, CONDUCTED THE MAJOR FIELDWORK OF THE STUDY UNDER CONTRACT TO ARB.

SLIDE 4 – PUBLIC OUTREACH

TO INFORM AND RECEIVE INPUT FROM THE PUBLIC, WE SET UP A WEBSITE AND LISTSERVE AT THE BEGINNING OF THE STUDY.

WE HELD 4 PUBLIC WORKSHOPS BOTH BEFORE THE STUDY AND AFTER THIS REPORT WAS DRAFTED. THERE WAS A 30-DAY PUBLIC COMMENT PERIOD ON THE DRAFT REPORT. WE RECEIVED A NUMBER OF HELPFUL COMMENTS, WHICH ARE REFLECTED IN THE CURRENT DRAFT REPORT.

WE ALSO MET INDIVIDUALLY WITH SCHOOL DISTRICTS, MANUFACTURERS, AND STATE AGENCIES.

SLIDE 5 -- PURPOSE

THE PURPOSE OF THIS STUDY WAS TWO-FOLD:

- TO IDENTIFY THE EXTENT OF ANY POTENTIALLY UNHEALTHFUL ENVIRONMENTAL CONDITIONS IN PORTABLE CLASSROOMS IN CALIFORNIA'S PUBLIC SCHOOLS; AND
- TO RECOMMEND, IN CONSULTATION WITH STAKEHOLDERS, ACTIONS THAT CAN BE TAKEN TO PREVENT OR REMEDY THE PROBLEMS WE FOUND.

SLIDE 6 – STUDY DESIGN

THE STUDY WAS CONDUCTED IN 2 PHASES. PHASE I WAS A MAIL SURVEY OF 1,181 CLASSROOMS IN 426 SCHOOLS. IT WAS CONDUCTED IN THE SPRING AND SUMMER OF 2001.

EXTENSIVE QUESTIONNAIRES WERE SENT TO TEACHERS AND FACILITY MANAGERS. PASSIVE FORMALDEHYDE SAMPLERS WERE ALSO SENT TO SOME SCHOOLS FOR DEPLOYMENT IN SEVERAL CLASSROOMS.

PHASE II, THE FIELD STUDY, INVOLVED INTENSIVE ENVIRONMENTAL MONITORING AND INSPECTION OF 201 CLASSROOMS IN 67 SCHOOLS. FIELD TECHNICIANS CONDUCTED 1-DAY VISITS OVER THE FALL AND WINTER OF 2001-2002.

IN BOTH PHASES I AND II, 2 PORTABLES AND 1 TRADITIONAL CLASSROOM AT EACH SCHOOL WERE STUDIED. TRADITIONALS WERE INCLUDED FOR COMPARISON, SINCE SOME ENVIRONMENTAL PROBLEMS WERE ANTICIPATED TO OCCUR IN BOTH TYPES OF CLASSROOMS.

THE CLASSROOMS AND SCHOOLS WERE SELECTED RANDOMLY, AND THE RESULTS WERE WEIGHTED TO ADJUST FOR SELECTION PROBABILITIES. THUS, BOTH PHASE I AND PHASE II PROVIDED REPRESENTATIVE, STATEWIDE SAMPLES.

SLIDE 7 – RESULTS

SO WHAT WERE THE RESULTS OF THIS STUDY? WE FOUND THAT THE ENVIRONMENTAL HEALTH CONDITIONS IN MANY OF CALIFORNIA'S K-12 CLASSROOMS DID NOT MEET RELEVANT GUIDELINES AND STANDARDS.

THE MOST SERIOUS PROBLEMS OCCURRED ONLY AT A SMALL PERCENTAGE OF SCHOOLS, BUT MANY STUDENTS AND TEACHERS COULD BE AFFECTED.

WE FOUND PROBLEMS IN THE FOLLOWING AREAS:

VENTILATION; TEMPERATURE AND HUMIDITY; NOISE; AIR POLLUTANTS; FLOOR DUST CONTAMINANTS; MOISTURE AND MOLD; AND FINALLY, LIGHTING. ALL OF THESE FACTORS CAN AFFECT THE HEALTH, SAFETY, AND PERFORMANCE OF STUDENTS AND TEACHERS.

BEFORE DISCUSSING THE RESULTS, I WOULD NOTE THAT THE RESULTS REFER TO BOTH PORTABLE AND TRADITIONAL CLASSROOMS, UNLESS SPECIFIED OTHERWISE.

SLIDE 8 – VENTILATION

IN THE AREA OF VENTILATION, WE FOUND THAT VENTILATION WITH OUTDOOR AIR WAS INADEQUATE FOR MORE THAN 40% OF THE CLASSROOM HOURS, ON AVERAGE. IT WAS SERIOUSLY DEFICIENT DURING 10% OF THE CLASSROOM HOURS.

ONE OF THE REASONS FOR INADEQUATE VENTILATION WAS THAT TEACHERS OFTEN TURNED OFF THE VENTILATION SYSTEM BECAUSE IT WAS TOO NOISY. 60% OF THE TEACHERS IN PORTABLES ACKNOWLEDGED DOING THIS, COMPARED TO 23% OF THOSE IN TRADITIONALS.

INSPECTORS ALSO FREQUENTLY FOUND PROBLEMS WITH THE OPERATION AND MAINTENANCE OF VENTILATION SYSTEMS. OUTDOOR AIR DAMPERS WERE SOMETIMES CLOSED, CONDENSATE PANS DID NOT ALWAYS DRAIN, AND AIR FILTERS AND HEAT EXCHANGER COILS WERE OFTEN DIRTY.

SLIDE 9 – PHOTO OF DIRTY FILTER

DIRTY FILTERS LIKE THE ONE IN THIS PHOTO INDICATE INADEQUATE MAINTENANCE AND POSSIBLE CONTAMINATION OF THE AIR DISTRIBUTION SYSTEM.

SLIDE 10 – TEMPERATURE AND HUMIDITY

TEMPERATURE AND HUMIDITY WERE MEASURED INDOORS AND OUTDOORS CONTINUOUSLY, AND COMPARED TO BUILDING DESIGN STANDARDS DEVELOPED BY THE AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR-CONDITIONING ENGINEERS.

THE RESULTS INDICATED THAT TEMPERATURE AND HUMIDITY WERE OFTEN OUTSIDE THE ACCEPTABLE RANGES. THE CLASSROOMS WERE TOO COOL OR TOO WARM FOR ABOUT 20-25% OF THE TIME. EXTREME TEMPERATURES WERE REACHED ABOUT 5% OF THE TIME.

SLIDE 11 – NOISE

NOISE WAS MEASURED IN CLASSROOMS DURING STUDENT RECESS WITH THE VENTILATION SYSTEM ON.

ALL ROOMS EXCEEDED THE ACOUSTICS GUIDELINE OF 35 DECIBELS FOR UNOCCUPIED CLASSROOMS. THIS GUIDELINE WAS DEVELOPED BY THE AMERICAN NATIONAL STANDARDS INSTITUTE AND THE WORLD HEALTH ORGANIZATION.

MANY ROOMS ALSO EXCEEDED THE COMMUNITY NUISANCE STANDARD OF 55 DECIBELS. SPECIFICALLY, 50% OF PORTABLES EXCEEDED THIS LEVEL, AND 38% OF TRADITIONALS EXCEEDED THIS LEVEL.

THE BEST PRACTICES GOAL IS 45 DECIBELS. THIS LEVEL IS USED AS A DESIGN GUIDELINE IN THE BEST PRACTICES MANUAL DEVELOPED BY THE COLLABORATIVE FOR HIGH PERFORMANCE SCHOOLS. THIS COLLABORATIVE IS COMPRISED OF CALIFORNIA STATE AGENCIES, PUBLIC UTILITIES, AND OTHERS.

SLIDE 12 -- ALDEHYDES

AS IN OTHER INDOOR ENVIRONMENTS, INDOOR FORMALDEHYDE LEVELS WERE ON AVERAGE SEVERAL TIMES HIGHER THAN THOSE OUTDOORS. INDOOR FORMALDEHYDE LEVELS WERE HIGHER IN WARMER MONTHS, IN CLASSROOMS WITH HIGHER HUMIDITY, AND IN NEWER PORTABLE CLASSROOMS. PORTABLES, ON AVERAGE, HAD SIGNIFICANTLY HIGHER FORMALDEHYDE LEVELS THAN DID TRADITIONAL CLASSROOMS, EVEN AFTER ADJUSTING FOR CLASSROOM AGE AND VENTILATION.

FORMALDEHYDE LEVELS WERE ASSESSED BY COMPARING INDOOR LEVELS TO HEALTH-BASED GUIDELINES FROM THE OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT.

THE RESULTS SHOW THAT:

- MORE THAN 4% OF THE CLASSROOMS EXCEEDED 27 PPB OF FORMALDEHYDE, THE 8-HOUR GUIDELINE FOR AVOIDING ACUTE IRRITANT EFFECTS, AND THAT
- ALL CLASSROOMS EXCEEDED THE FORMALDEHYDE LEVEL EQUIVALENT TO A TEN-IN-A-MILLION RISK OF EXCESS CANCER FOR LIFETIME EXPOSURE.

FOR OTHER ALDEHYDES, THE LEVELS WERE ALSO HIGHER INDOORS, INCLUDING THOSE FOR ACETALDEHYDE, A KNOWN CARCINOGEN AND TOXIC AIR CONTAMINANT.

SLIDE 13 – BUILDING MATERIALS

INDOOR FORMALDEHYDE LEVELS WERE ALSO SIGNIFICANTLY HIGHER IN CLASSROOMS WITH BUILDING MATERIALS KNOWN TO OFF-GAS FORMALDEHYDE, INCLUDING NEW CABINETS AND BOOKCASES MADE WITH PRESSED WOOD. THIS PHOTOGRAPH SHOWS SOME OF THESE BUILDING MATERIALS. SUBSTITUTE MATERIALS THAT EMIT LITTLE OR NO FORMALDEHYDE ARE CURRENTLY AVAILABLE.

SLIDE 14 – VOCs

SOME VOLATILE ORGANIC COMPOUNDS (OR VOCs) WERE FOUND AT HIGHER LEVELS INDOORS THAN OUTDOORS, BUT NO HIGHER THAN LEVELS MEASURED IN HOMES AND OFFICE BUILDINGS. THE INDOOR LEVELS OF VOCs DID NOT EXCEED ANY AVAILABLE HEALTH GUIDELINES FOR ACUTE (OR IMMEDIATE) EFFECTS.

IN TERM OF EXCESS CANCER RISK, NEARLY ALL CLASSROOMS HAD LEVELS OF BENZENE THAT EXCEEDED A TEN-IN-A-MILLION RISK, AND MOST CLASSROOMS HAD CHLOROFORM LEVELS THAT EXCEEDED A ONE-IN-A-MILLION RISK.

HOWEVER, OUTDOOR AIR WAS A MAJOR SOURCE OF BENZENE AND CHLOROFORM. ALSO, THESE ESTIMATES ARE BASED ON A CONSERVATIVE ASSUMPTION OF LIFETIME EXPOSURE AT THESE LEVELS.

SLIDE 15 – PARTICLES

PARTICLE COUNTS FOR DIFFERENT SIZE RANGES WERE MEASURED CONTINUOUSLY INDOORS AND OUTDOORS DURING THE DAY.

THE RESULTS INDICATE THAT THE HIGHEST PARTICLE COUNTS WERE FOUND IN PORTABLES, ESPECIALLY FOR THE 2.5 MICRON SIZE RANGE. A MAJOR SOURCE OF PARTICLES WAS NEARBY VEHICLE TRAFFIC -- OVER HALF THE ROOMS WERE WITHIN 50 FEET OF A ROADWAY OR PARKING LOT. ANOTHER LIKELY SOURCE OF PARTICLES WAS RESUSPENSION OF DUST FROM CARPETS AND RUGS, WHICH ARE FOUND MORE FREQUENTLY IN PORTABLES.

SLIDE 16– PORTABLES ALONG ROADWAY

HERE IS AN EXAMPLE OF A COMMON LOCATION FOR PORTABLES – NEAR VEHICLE TRAFFIC, WITH THE OUTDOOR AIR INTAKES FACING THE ROAD.

SLIDE 17 – FLOOR DUST: METALS

DUST CONTAMINANTS ARE MAINLY A HEALTH CONCERN FOR YOUNGER CHILDREN. THEY SPEND MORE TIME IN CONTACT WITH THE FLOOR, AND THEY EXPERIENCE HIGHER EXPOSURES.

FLOOR DUST WAS VACUUMED FROM CLASSROOM CARPETS, OR FROM THE HARD FLOORS AND OTHER SURFACES IN CLASSROOMS WITHOUT CARPET. SEVERAL METALS WERE ANALYZED IN THE FLOOR DUST.

THE RESULTS SHOW THAT LEVELS OF LEAD IN FLOOR DUST WERE ELEVATED OVER TYPICAL SOIL LEVELS. THE LEAD MOST LIKELY CAME FROM TRACK-IN OF CONTAMINATED SOIL OR FROM LEAD PAINT CHIPS.

IN ADDITION, LEVELS OF ARSENIC IN FLOOR DUST WERE ELEVATED OVER TYPICALLY SOIL LEVELS. SOME CALIFORNIA SOILS CAN CONTAIN HIGH LEVELS OF ARSENIC. OTHER POSSIBLE SOURCES INCLUDE FERTILIZER CONTAMINANTS AND WOOD PRESERVATIVES.

SLIDE 18 – PHOTO OF PEELING PAINT

HERE IS PHOTO OF OLDER PORTABLE CLASSROOMS WITH PEELING PAINT, WHICH CAN RESULT IN EXPOSURE TO LEAD.

SLIDE 19 – FLOOR DUST: PESTICIDES, PAHs, ALLERGENS

NUMEROUS PESTICIDES WERE FOUND IN ALL FLOOR DUST SAMPLES. 6 PESTICIDES WERE FOUND IN OVER 80% OF THE SAMPLES, INCLUDING CHLORPYRIFOS, A BANNED PESTICIDE. 4 MORE PESTICIDES WERE FOUND IN OVER 50% OF THE SAMPLES.

THE SOURCES OF PESTICIDES APPEAR TO BE RECENT AND HISTORICAL APPLICATIONS INDOORS, AND TRANSPORT FROM OUTDOORS ON SHOES AND CLOTHES. FURTHER ASSESSMENT OF THE RESULTS IS UNDERWAY.

POLYCYCLIC AROMATIC HYDROCARBONS (OR PAHs) WERE ALSO MEASURED IN THE FLOOR DUST. MOST OF THE PAHs MEASURED WERE FOUND IN OVER 80% OF THE ROOMS. THE PAH LEVELS WERE RELATIVELY LOW; THEY WERE HIGHEST IN THE PORTABLES.

BECAUSE ALLERGENS ARE A TRIGGER FOR ASTHMA SYMPTOMS, COMMON ALLERGENS WERE MEASURED IN THE FLOOR DUST.

CAT AND DOG ALLERGENS WERE FOUND IN OVER 50% OF THE ROOMS, BUT NEARLY ALL WERE BELOW SENSITIZATION LEVELS. THE MAIN SOURCE OF THESE ALLERGENS IS TRANSPORT FROM THE HOME VIA CLOTHING. COCKROACH AND DUST MITE ALLERGENS WERE ONLY FOUND INFREQUENTLY AND AT LOW LEVELS.

SLIDE 20 – MOISTURE AND MOLD

THE PHASE I MAIL SURVEY RESULTS INDICATED WIDESPREAD PROBLEMS RELATED TO MOISTURE, WHICH IS A PRECURSOR TO MOLD GROWTH. 63% OF THE TEACHERS REPORTED MUSTY ODORS, A SIGN OF MOLD PRESENCE. 43% OF THE TEACHERS REPORTED CURRENT OR PREVIOUS FLOODS OR LEAKS. 9% OF THE TEACHERS REPORTED VISIBLE MOLD IN THE CLASSROOM.

THE FIELD OBSERVATIONS IN PHASE II INDICATED THAT 30% OF ALL ROOMS HAD WATER STAINS ON THE CEILING. 17% OF ALL ROOMS HAD EXCESS MOISTURE MEASURED IN THE WALLS, FLOOR, OR CEILING. IN ADDITION, 3% OF PORTABLES HAD VISIBLE MOLD ON THE CEILING (NONE WAS FOUND IN TRADITIONALS). FOR EXTERIOR WALLS, 3% OF ALL ROOMS HAD VISIBLE MOLD.

SLIDE 21 – PHOTO

HERE ARE 2 EXAMPLES OF COMMON MOISTURE SOURCES.

THE TOP PHOTOGRAPH SHOWS POOR DRAINAGE AROUND THE BUILDING FOUNDATION. NOTE THE WATER DRAINING TO A LOW SPOT NEAR THE BUILDING, AND PERHAPS A DRAIN UNDERNEATH THE BUILDING.

IN THE BOTTOM PHOTOGRAPH, NOTE THE WATER STAINS ON THE CEILING. THESE ARE PROBABLY FROM A ROOF LEAK AND/OR A LEAK AROUND THE ROOFTOP HEATING AND COOLING SYSTEM.

SLIDE 22 – PHOTO

HERE IS AN EXAMPLE OF MOLD GROWTH HIDDEN IN THE WALLBOARD IN A CLASSROOM. NOTE THE DARK AREAS ON THE WALLBOARD.

SLIDE 23 – LIGHTING

LIGHTING WAS MEASURED AT THE CENTER OF THE ROOM, AND COMPARED TO CURRENT PROFESSIONAL DESIGN STANDARDS. ABOUT ONE-THIRD OF ALL ROOMS DID NOT MEET THE STANDARD OF 50 FOOT-CANDLES FOR VIEWING LOW-CONTRAST MATERIAL.

IN ADDITION, A SMALL PERCENTAGE OF ROOMS DID NOT MEET THE STANDARD OF 30 FOOT-CANDLES FOR VIEWING HIGH-CONTRAST MATERIALS.

SLIDE 24 – CONCLUSIONS

IN CONCLUSION, THESE RESULTS SHOW THAT THE MAJORITY OF CALIFORNIA’S K-12 CLASSROOMS NEED IMPROVEMENT IN ONE OR MORE AREAS OF INDOOR ENVIRONMENTAL QUALITY:

- FRESH AIR VENTILATION AND NOISE
- SOURCES OF CONTAMINANTS
- MOISTURE INTRUSION, AND
- MAINTENANCE, REPAIR, AND CLEANING PRACTICES.

THERE ARE SOLUTIONS AVAILABLE FOR THESE PROBLEMS.

HOWEVER, THESE SOLUTIONS WILL REQUIRE COLLABORATIVE EFFORTS AMONG THE STATE AGENCIES, SCHOOL DISTRICTS, FACILITY MANAGERS, TEACHERS, PARENTS, AND THE MANUFACTURERS OF PORTABLE CLASSROOMS AND VENTILATION SYSTEMS. MOST IMPORTANTLY, WE MUST SHIFT THE EMPHASIS FROM REMEDIATION AFTER THE FACT, TO PREVENTION.

SLIDE 25 -- RECOMMENDATION GROUPING

WE DEVELOPED A NUMBER OF RECOMMENDATIONS TO ADDRESS THE VARIOUS PROBLEMS WE FOUND. WE BROKE THE RECOMMENDATIONS INTO 2 GROUPS. GROUP 1 RECOMMENDATIONS ARE ACTIONS THAT ARE HIGH-PRIORITY, HIGH BENEFIT, AND RELATIVELY LOW COST. GROUP 2 RECOMMENDATIONS ARE PRIORITY ACTIONS THAT WILL REQUIRE A LONGER TERM EFFORT OR HIGHER COSTS TO IMPLEMENT.

SLIDE 26 -- GROUP 1 RECOMMENDATIONS

IN GROUP 1, THE FIRST RECOMMENDATION IS THAT SCHOOL DISTRICTS AND THE STATE ASSURE THAT ALL SCHOOL BUILDINGS MEET ALL RELEVANT STATE REGULATIONS. THEY ESPECIALLY NEED TO MEET THE CAL/OSHA REGULATIONS FOR OPERATION AND MAINTENANCE OF VENTILATION SYSTEMS, FOR SANITATION, AND FOR PREVENTION AND REMEDIATION OF MOISTURE INTRUSION.

RECOMMENDATION 2 IS THAT SCHOOLS CONDUCT “SELF-ASSESSMENTS” OF BASIC HEALTH AND SAFETY CONDITIONS. FOR EXAMPLE, THE LOS ANGELES UNIFIED SCHOOL DISTRICT HAS DEVELOPED A SIMPLE CHECKLIST FOR SELF-INSPECTION THAT CAN BE USED BY OTHER SCHOOL DISTRICTS. THE LOS ANGELES UNIFIED SCHOOL DISTRICT FOUND THAT THE MAJORITY OF THE HEALTH AND SAFETY PROBLEMS THEY IDENTIFIED COULD BE FIXED AT LITTLE OR NO COST.

RECOMMENDATION 3 IS THAT THE STATE SHOULD REQUIRE DISTRICTS AND SCHOOLS TO DEVELOP AND IMPLEMENT AN INDOOR ENVIRONMENTAL QUALITY MANAGEMENT PLAN TO HELP MAKE PREVENTIVE MAINTENANCE MORE ROUTINE. THE U.S. EPA’S *IAQ TOOLS FOR SCHOOLS KIT* PROVIDES GUIDANCE FOR DEVELOPING SUCH A PLAN, AND IS FREE TO THE PUBLIC.

SCHOOL DISTRICTS IN VISALIA, SAUGUS, AND SAN FRANCISCO, AMONG OTHERS, HAVE SUCCESSFULLY AND COST-EFFECTIVELY IMPLEMENTED *TOOLS FOR SCHOOLS* PROGRAMS.

SLIDE 27: GROUP 1 CONTD.

CONTINUING WITH THE GROUP 1 RECOMMENDATIONS, WE RECOMMEND THAT THE STATE ESTABLISH A POLICY TO INCORPORATE “BEST PRACTICES” INTO THE DESIGN, CONSTRUCTION, OPERATION, AND MAINTENANCE OF SCHOOLS. IN PARTICULAR, THE BEST PRACTICES MEASURES DEVELOPED BY THE COLLABORATIVE FOR HIGH PERFORMANCE SCHOOLS SHOULD BE FOLLOWED. SOME DISTRICTS IN CALIFORNIA HAVE ALREADY ADOPTED THESE BEST, INCLUDING THE LOS ANGELES UNIFIED SCHOOL DISTRICT.

WE ALSO RECOMMEND EXPANDING THE STATE’S REVIEW OF DESIGNS FOR NEW SCHOOL BUILDINGS AND MAJOR RENOVATIONS TO INCLUDE VENTILATION SYSTEMS AND BUILDING MATERIALS. THE DIVISION OF THE STATE ARCHITECT IS PROPOSING TO ADD TRAINED STAFF TO MEET THIS NEED, AND WE SUPPORT THIS PROPOSAL.

IN RECOMMENDATION 6, WE RECOMMEND THAT PORTABLE CLASSROOMS SHOULD BE SITED PROPERLY, AWAY FROM HIGHWAYS AND BUSY ROADS, AND WITH PROPER GRADING AND DRAINAGE.

RECOMMENDATION 7 IS THAT THE STATE IMPLEMENT AN INTERIM LIMIT OF 45 DECIBELS FROM HEATING, VENTILATING, AND AIR-CONDITIONING SYSTEMS (OR HVAC), AND ENCOURAGE OTHER SOUND REDUCTION MEASURES SUCH AS REDUCTION OF NOISE FROM LIGHTS.

SLIDE 28: GROUP 2 RECOMMENDATIONS

MOVING ON TO GROUP 2 RECOMMENDATIONS, THESE ACTIONS SHOULD START NOW, BUT WILL TAKE MORE TIME AND/OR RESOURCES TO IMPLEMENT.

MOST IMPORTANTLY, WE RECOMMEND THAT THE STATE AND DISTRICTS ASSURE STABLE, LONG-TERM FUNDING FOR BOTH SCHOOL CONSTRUCTION AND PREVENTIVE MAINTENANCE. FUNDING LEVELS FOR MAINTAINING SCHOOL FACILITIES HAVE BEEN INADEQUATE AND INCONSISTENT FOR SOME TIME.

NEXT, THE STATE SHOULD DEVELOP AND OFFER COORDINATED TRAINING PROGRAMS AND MATERIALS FOR FACILITY MANAGERS, CUSTODIAL STAFF, AND TEACHERS. THOSE WHO ARE CLOSEST TO THE CLASSROOM ARE OFTEN NOT AWARE OF CURRENT “BEST PRACTICES” FOR OPERATION AND MAINTENANCE OF CLASSROOMS.

RECOMMENDATION 10 IS THAT ALL SCHOOLS IMPLEMENT INTEGRATED PEST MANAGEMENT, WHICH IS A PROGRAM OF PREVENTIVE HOUSEKEEPING PRACTICES AND USE OF LEAST-TOXIC PESTICIDES. SUCCESSFUL APPLICATION OF INTEGRATED PEST MANAGEMENT HAS BEEN SUFFICIENTLY WIDESPREAD TO SUPPORT ITS IMPLEMENTATION AT ALL PUBLIC SCHOOLS.

RECOMMENDATION 11 IS THAT OLDER PORTABLE CLASSROOMS SHOULD BE REMOVED AND REPLACED WHEN THEY BECOME UNSERVICEABLE OR DO NOT PROVIDE AN ADEQUATE LEARNING ENVIRONMENT FOR CHILDREN.

NEXT, BUILDING COMMISSIONING SPECIFICATIONS FOR NEW BUILDINGS SHOULD BE DEVELOPED AND IMPLEMENTED BY THE STATE AND SCHOOLS DISTRICTS. BUILDING COMMISSIONING INVOLVES TESTING OF VENTILATION, LIGHTING, AND OTHER BUILDING SYSTEMS UNDER NORMAL AND HIGH-CAPACITY OPERATIONAL CONDITIONS. IT IS CONSIDERED “BEST PRACTICES” FOR NEW BUILDINGS AND CLASSROOMS.

SLIDE 29 – GROUP 2 CONTD.

NOW FOR THE LAST 4 RECOMMENDATIONS FOR LONGER-TERM OR HIGHER-COST EFFORTS.

RECOMMENDATION 13 IS THAT THE STATE IMPROVE ITS INVENTORY DATABASE OF PUBLIC SCHOOL FACILITIES. THESE SCHOOL FACILITIES REPRESENT ONE THE STATE’S GREATEST FINANCIAL ASSETS.

RECOMMENDATION 14 IS THAT THE STATE SHOULD CONVENE A TASK FORCE OF EXPERTS IN AUDIOLOGY, MEDICINE, EDUCATION, AND RELATED FIELDS TO DEVELOP AN INDOOR NOISE GUIDELINE OR STANDARD FOR CALIFORNIA’S PUBLIC SCHOOLS.

RECOMMENDATION 15 IS THAT THE STATE SHOULD DEVELOP CHEMICAL EXPOSURE GUIDELINES OR STANDARDS FOR CLASSROOMS. THERE IS A LACK OF BENCHMARKS FOR FULLY ASSESSING AND ASSURING HEALTHFUL ENVIRONMENTAL CONDITIONS FOR CHILDREN AND TEACHERS IN CLASSROOMS.

LAST BUT NOT LEAST, WE RECOMMEND THAT PORTABLE CLASSROOMS BE RE-DESIGNED FROM THE GROUND UP. SOUTHERN CALIFORNIA EDISON, LAWRENCE BERKELEY NATIONAL LABORATORY, AND SEVERAL MANUFACTURERS HAVE BEGUN TO DEVELOP ADVANCED DESIGNS OF RELOCATABLE CLASSROOMS. SUCH ADVANCED DESIGNS SHOULD BE FULLY DEVELOPED AND DEMONSTRATED TO DETERMINE IF THEY MIGHT BETTER MEET FUTURE CLASSROOM NEEDS.

SLIDE 30: NEXT STEPS FOR ARB

ARB CAN TAKE CERTAIN STEPS TO HELP IMPLEMENT THESE RECOMMENDATIONS. FIRST, THE BOARD CAN APPROVE THIS REPORT FOR SUBMITTAL TO THE GOVERNOR AND THE LEGISLATURE.

NEXT, STAFF WILL CONTINUE WORKING WITH VARIOUS STAKEHOLDERS, INCLUDING STATE AND FEDERAL AGENCIES, SCHOOLS, TEACHERS, PARENTS, AND MANUFACTURERS, TO FACILITATE THE IMPLEMENTATION OF THESE RECOMMENDATIONS.

IN PARTICULAR, STAFF WILL CONTINUE TO PARTICIPATE IN THE STATE RELOCATABLES WORKING GROUP. THIS INTERAGENCY GROUP IS CURRENTLY WORKING TO IMPROVE THE STATE'S DESIGN SPECIFICATIONS FOR LEASED PORTABLE CLASSROOMS, AND PLANS TO DEVELOP TRAINING PROGRAMS AND TAKE OTHER ACTIONS AS WELL. THIS GROUP IS PART OF THE STATE SUSTAINABLE BUILDING TASK FORCE, AN INTER-AGENCY GREENBUILDING GROUP THAT WAS ESTABLISHED BY EXECUTIVE ORDER TO ACHIEVE "SUSTAINABLE AND HEALTHY" STATE BUILDINGS.

FINALLY, STAFF ARE CURRENTLY DEVELOPING A FORMALDEHYDE AIRBORNE TOXIC CONTROL MEASURE FOR COMPOSITE WOOD PRODUCTS. WE EXPECT THIS TO BE READY FOR THE BOARD'S CONSIDERATION IN THE FIRST HALF OF 2004.

SLIDE 31: THE END/THANK YOU

THAT ENDS MY PRESENTATION. THANK YOU VERY MUCH FOR YOUR ATTENTION.