

COMMISSION STUDY SESSION

November 6, 2006 – 6:00 p.m.

Commission Chambers

Review of Recommendation of Tax Abatement Review Committee-LaQuinta Inn

COMMISSION AGENDA

November 6, 2006 - 7:00 p.m.

Commission Chambers

MEETING NO. 4662

CALL TO ORDER

ROLL CALL

INVOCATION by Elder David Smith of Hannah Memorial Church

PLEDGE OF ALLEGIANCE

PETITIONS & PROCLAMATIONS

VISITORS (Limit of 5 minutes per individual and fifteen minutes per topic. Final action may be deferred until the next City Commission meeting, unless an emergency situation does exist)

Dick Ranney regarding an historical project at Ft. Dodge

City of Character trait for November – Hospitality

CONSENT CALENDAR

1. Approval of Minutes of Regular Meeting of October 16, 2006
Approval of Minutes of Special Meeting of October, 23, 2006
2. Approval of payment of bills.
3. Approval of cereal malt beverage license applications for:
 - A. Presto Convenience Store #27, 2615 E. Trail Street
 - B. South Dodge Shamrock, 302 S. Second Avenue(Pending inspections by Dodge City Fire and Inspection Depts.)
4. Approval of addendum to agreement for sewer extension at Happy Homes II and Ranchwood Estates.
5. Approval Westlink Tower Lease.

ORDINANCES & RESOLUTIONS

UNFINISHED BUSINESS

1. Approval of OMI Contract Amendment. Report by City Attorney, Ken Strobel.
2. Review of medical findings on the effects of second-hand smoke.

NEW BUSINESS

1. Approval of Engagement Letter with Gilmore & Bell, Bond Counsel. Report by Finance Director, Nannette Pogue.

OTHER BUSINESS

Commissioners
City Manager

EXECUTIVE SESSION – to discuss land acquisition matters

ADJOURNMENT

MINUTES
October 16, 2006 - 7:00 p.m.
MEETING NO. 4661

MAYOR Jim Sherer called the regular meeting to order at 7:00 p.m.

RESPONDING TO ROLL CALL were Mayor Jim Sherer, Commissioners Terry Lee, Kent Smoll, and Rick Sowers. Reported absent was Commissioner Jim Lembright.

INVOCATION was led by Rev. Jeff Turner, First Missionary Church.

The PLEDGE OF ALLEGIANCE was recited.

PETITIONS & PROCLAMATIONS

VISITORS (Limit of 5 minutes per individual and fifteen minutes per topic. Final action may be deferred until the next City Commission meeting, unless an emergency situation does exist)

The CONSENT CALENDAR was approved on a motion by Commissioner Sowers, seconded by Commissioner Smoll, by a vote of 4-0.

1. Approval of Minutes of Regular Meeting of October 2, 2006
2. Approval of payment of bills.
3. Approval of Change Order #6 for the Wyatt Earp Reconstruction Project.

Commissioner Lee moved to add the following item, #4 to the Consent Agenda. Commissioner Smoll seconded. Motion passed by a vote of 4-0.

4. Approval of Change Order #7 for the Wyatt Earp Reconstruction Project.

ORDINANCES & RESOLUTIONS

Ordinance No. 3423: An Ordinance vacating portions of the restricted access along the East Right-Of-Way line of Fourteenth Avenue abutting the West part of Block 1, Hi Court Townhouses was adopted on a motion by Commissioner Smoll, seconded by Commissioner Sowers, by unanimous vote.

Scott Fisher spoke regarding this issue.

Ordinance No. 3424: An Ordinance authorizing and; providing for the issuance of \$1,095,000 Principal amount of General Obligation Bonds, Series 2006-A was adopted on a motion by Commissioner Smoll, seconded by Commissioner Sowers, by a vote of 3-1 with Commissioner Lee voting nay.

Commissioner Smoll moved to award the sale of the bonds to Commerce Bank, NA for an average interest rate of 3.848%. The motion passed by a vote of 3-1 with Commissioner Lee voting nay.

Resolution 2006-13: A Resolution prescribing the form and details of and authorizing and directing the sale and delivery of \$1,095,000 principal amount of General Obligation Bonds Series 2006-A, previously authorized by Ordinance No. 3424 was adopted on a motion by Commissioner Smoll, seconded by Commissioner Sowers, by a vote of 3-1 with Commissioner Lee voting nay.

UNFINISHED BUSINESS

PUBLIC INPUT SESSION – Discussion of Limited Smoking.

Robert “Bob” Randall read facts from federal government. He is opposed to a smoking ban.

Dennis Ernst spoke in favor of a smoking ban

Dr. David Brian is in favor of a smoking ban

Cathie Brian in favor of a ban

Linda Duree thanked the Commission for discussing this item soon after she made the request.

Dr. Jerry Ketner thought the Commission does an excellent job. He talked about quality of life.

He talked about alcohol issues and thinks quality of life includes a smoke-free environment.

Warren Duree agrees with Dr. Ketner

Lee Owens agrees with non-smoking issue. He thinks it can be used as an economic development tool.

Deb Rodda spoke on worker safety and is in favor of a smoke free ordinance.

Dusty Herring is against a smoking ban. He doesn't think it should be government regulated.

He thinks it should be up to the business.

Jose Vargas is in favor of smoking ban

Mark & Cynthia Bruton supports the smoking ban

Riley Skaggs thinks it should be up to individual businesses. He doesn't want the Commission making a decision about his business

Commission Smoll said he has been a proponent of letting the businesses decide.

Commissioner Sherer is still in investigative mode and hasn't made a decision on his position.

Commissioners Lee and Sowers did not voice their position.

NEW BUSINESS

1. An agreement between KDOT and the City for Wyatt Earp, Phase II was approved on a motion by Commissioner Lee, seconded by Commissioner Sowers, by a vote of 4-0.

Commissioner Smoll moved to approve the resolution, Commissioner seconded. The motion passed by a vote of 4-0.

2. A proposal for rehabilitation of Well No. 9 by Layne-Western in the amount of \$53,884 was approved on a motion by Commissioner Sowers, seconded by Commissioner Lee, by a vote of 4-0.

3. Discussion of lighting on the Bicycle/Pedestrian Path. Report by Park & Recreation Director, Paul Lewis.

OTHER BUSINESS

Commissioner Sherer

- Thanked business who helped with and sponsored Dodgetoberfest in the park
- Thanked Dan Williamson, his firefighters, and businesses for the Bell Park
- Thanked CVB staff for their work on the recent TIAK (Travel Industry Assoc. of Kansas) meeting in Dodge City.
- Thanked the Rainers, volunteers working the Train Station waiting room. There will be an open house on Wed., Oct. 18 from 11:00 to 2:00.
- Asked for an update on 14th Avenue construction at the next meeting.

Commissioner Sowers

- Asked for information about the LaQuinta Inn
- Thanked volunteers working on the Habitat for Humanity house
- Expressed concerns with the Interlocal Agreement-d. He has information comparing sales tax receipts in other comparable cities in Kansas since Why Not Dodge initiative began. Why Not Dodge Program has positive benefits.

Commissioner Lee

- Would like to talk with the County about paying for the Civic Center parking lot from Why Not Dodge Funds.
- Would like to revisit putting the Demon Logo on the water tower.

Commissioner Smoll

- We need to be proud of everything happening in Dodge City.

City Manager, Jeff Pederson

- Discussed the agenda for the upcoming joint City/County Commission meeting Oct. 23
- CFAB has their regular meeting this Thursday, Oct. 19
- Working with Cox Communications on franchise
- Still fine tuning business licensing with staff

On a motion by Commissioner Smoll, seconded by Commissioner Sowers, the meeting adjourned by unanimous vote.

V. James Sherer, Mayor

ATTEST:

Nannette Pogue, City Clerk

**Joint Meeting of the DODGE CITY COMMISSION and
FORD COUNTY BOARD OF COMMISSIONERS
Monday, October 23, 2006; 5:00 p.m.
MINUTES**

Mayor Jim Sherer called the meeting to order at 5:00 p.m.

Responding to ROLL CALL were Mayor Sherer, Commissioners Jim Lembright, Rick Sowers, Kent Smoll and Terry Lee.

The County Commission called roll with Commissioners Kim Goodnight, John Swayze and Terry Williams responding.

Members of the Community Facilities Advisory Board were also present.

Bob Wetmore, Dodge City/Ford County Economic Development Director and Chamber of Commerce Director moderated the meeting. The group identified items to include in a Request For Qualifications for management of Dodge City Raceway Park

Large crowds – Kim Goodnight

National Races – Rick Sowers

Local Races – Pat Schrader

Higher car counts – Greg Starks

Larger & Better fan support and participation – Kim Goodnight

Rapport with Drivers – Terry Lee

Amount of subsidy – Terry Lee

Relationship with other regional tracks – John Swayze

Other events for track – Kent Smoll

Coordination with other community events – Terry Williams

Race night scheduling – Rick Sowers

Customer Services – fans and drivers – Bob Wetmore

Marketing – Bob Wetmore

Sales of concessions, novelties, etc. – Rick Sowers

Facilities Maintenance – Rick Sowers

Track & Race management – Rick Sowers

Advisory Board

Rules, Regulations, Points (consistent with other tracks) – Kim Goodnight

Corporate Sponsorship and community support – Jim Sherer

Infrastructure Improvements – Rick Sowers

Education & Growth of Support

How do you get there from here?

- Management
- Need to know who is qualified – What are qualifications
- Prior racetrack management experience
- Financial capability/background
 - Access to financial information
- Marketing Experience
- Industry Contacts
- Programming
- Measurement of Success

Greg Starks suggested there were 2 methods to develop the RFQ:

Defined specifically

Request for Qualifications – these are the goals we want to achieve, how can you help us achieve them?

Kent Smoll suggested a third option: leasing the facility

The Governing Bodies charged the Community Facilities Advisory Board with the responsibility of creating the framework for a Request For Qualifications. They would like a measure of success of the racetrack.

The CFAB will meet Thursday, October 26 at 7:00 p.m. to begin the process.

Discussion of the 2007 Sales Tax Project Fund Budget

- Discussed fees charged by the City and County to administer the fund
- Discussed the racetrack division of the 2007 Budget

Commissioner Smoll moved and Commissioner Lembright seconded to approve and administrative fee transfer to the City in the amount of \$50,000 and to the County in the amount of \$5,000 and set the racetrack budget at \$58,000. The motion passed unanimously.

The County Commission voted unanimously on a similar motion.

On a motion by Commissioner Sowers, seconded by Commissioner Lembright, the meeting adjourned by unanimous vote.

V. James Sherer, Mayor

ATTEST:

Nannette Pogue, City Clerk

(This form prepared by the Attorney General's office)

(Corporate Application Form)

APPLICATION FOR LICENSE TO RETAIL CEREAL MALT BEVERAGES

Dodge City, Ford COUNTY, KANSAS, October 16, 2006

TO THE GOVERNING BODY OF THE CITY OF Dodge City, KANSAS,

or THE BOARD OF COUNTY COMMISSIONERS OF Ford COUNTY, KANSAS.

GENTLEMEN—On behalf of the Presto Convenience Stores, LLC. corporation whose principal place of business is Andover, KS

and under authority of the resolution of the Board of Directors of said corporation, I hereby apply for a license to retail cereal malt beverages in conformity with the laws of the State of Kansas and the rules and regulations prescribed and hereafter to be prescribed by you relating to the sale or distribution of cereal malt beverages on behalf of said corporation; for the purpose of securing such license, I make the following statements under oath:

1. The proposed licensee is Presto Conv. Store #27 corporation with principal place of business at Andover, KS upon which the place of business is located is Presto Convenience Stores, LLC Andover, KS

The resident agent is Doug Wald with offices at Andover, KS

Said corporation was incorporated on May of 1969 A copy of the Articles of Incorporation are presently on file with the Register of Deeds of this County. Yes () No (X)

2. The following are the full and complete list of officers, directors, stockholders owning in the aggregate more than 25 percent of corporate stock, and managers of said corporation together with their position and address, age, date of birth, place of birth, method of acquiring United States citizenship—if acquired by naturalization, date and place of naturalization, and the length of residence in the State of Kansas.

- Terry Presto - President 14008 Reeder Overland Park, KS 66221. Age 48 DOB 10.18.57 Garden City, KS Birth - Life

- Doug Wald - Vice Pres/ Secretary 138 Belle Terre Wichita, KS 67230 Age 40. DOB 7.13.65 Aberdeen, SD 16 years

3. The premises for which the license is desired are located at 2615 E. Trail

(a) The legal description of the premises is Northwest Quarter Sec 32 Township 26 S. Range 24 North (b) The street number is 2615 E Trail

(c) The building is described as Block

(d) The corporate business under the license will be conducted in the name of the corporation or in the following name: Presto Convenience Store #27

4. The name and address of the owner or owners of the premises upon which the place of business is located is Presto Convenience Stores, LLC Andover, KS

5. I hereby certify with regard to each of the persons named in number 2 above the following statements are true:

- (a) None of them has within the last two years from this date been convicted of (1) A felony (2) A crime involving moral turpitude (3) Drunkenness (4) Driving a motor vehicle while under the influence of intoxicating liquor (5) Violation of any state or federal intoxicating liquor law If any of the above have been convicted of any of the above specified offenses, the details are set out hereinafter.

(b) No manager, officer or director or any stockholder owning in the aggregate more than 25% of the stock of the corporation has been an officer, manager or director, or a stockholder owning in the aggregate more than 25% of the stock of a corporation which:

- (A) has had a retailer's license revoked under K.S.A. 41-2708 and amendments thereto; or (B) has been convicted of a violation of The Drinking Establishment Act or the Cereal Malt Beverage Laws of the State.

6. The place of business will be conducted by the following manager or agent:

Name Peggy L. Huffman Address 1802 Military Residence Dodge City, KS 67801

Length of residence within this city or county in which the application is being made 13 years

Method of obtaining U.S. citizenship together with date of naturalization if such is the method Birth

Date and place of birth 2-27-43 Hardthier, KS

I hereby certify that with regard to this above-named manager the statement contained in number 5 above is in every respect true. If not, the details are set out hereinafter.

7. This application is for a license to retail cereal malt beverages for consumption on the premises. () For a license to retail cereal malt beverages in original and unopened containers and not be consumption on the premises. (X)

A license fee of \$12500 is enclosed herewith.

(Individual Application Form)

APPLICATION FOR LICENSE TO RETAIL CEREAL MALT BEVERAGES

Dodge City Ferd COUNTY, KANSAS, 11-1, 2006

TO THE GOVERNING BODY OF THE CITY OF Dodge City, KANSAS,

or
THE BOARD OF COUNTY COMMISSIONERS OF Ferd COUNTY, KANSAS.

I hereby apply for a license to retail cereal malt beverages in conformity with the laws of the State of Kansas and the rules and regulations prescribed and hereafter to be prescribed by you relating to the sale or distribution of cereal malt beverages; for the purpose of securing such license, I make the following statements under oath:

1. (a) Name of proposed licensee South Dodge Shamrock

(b) Age 45

(c) Place and date of birth Newton KS
10.22.61, 20

(d) Residence address 2504 Walshe

(e) I have been a resident of the State of Kansas LIFE years.

2. The premises for which the license is desired are located at 302 S 2nd
O.C. KS 67801

(a) The legal description of said property is Crowford Additions

(b) The street number is 302 S 2nd

(c) The building to be used is concrete Block

(d) The business will be conducted under the following name: South Dodge Shamrock

3. The name and address of the owner or owners of the premises upon which the proposed business will be located is Tim KOSTETZ
302 S 2nd O.C. KS.

4. I am a citizen of the United States. Yes , No ().

(a) My citizenship arises by birth , Naturalization ().

(b) My place of naturalization and the date thereof is as follows:
_____ 20____

5. I have (), have not , been convicted of a felony within two years immediately preceding the date of this application.

6. I have (), have not , been convicted of a crime involving moral turpitude within two years immediately preceding the date of this application.

7. I have (), have not , been adjudged guilty of drunkenness within two years immediately preceding the date of this application.

8. I have (), have not , been adjudged guilty or entered a plea, or forfeited bond on a charge of driving a motor vehicle while under the influence of intoxicating liquors within two years immediately preceding the date of this application.

9. I have (), have not , been convicted of a violation of any state or federal intoxicating liquor law within two years immediately preceding the date of this application.

10. My place of business will be conducted by a manager or agent— Yes (), No .

(a) If the answer above is yes, the name, age, and residence of manager or agent is _____

Said manager or agent does (), does not (), have the qualifications to have a license issued in his own name. The same to be determined by reference to K.S.A. 41-2703, K.S.A. 41-2702. Specifies concerning his residence, citizenship, and the answers to questions 5 through 9 are as follows:

11. I have , have not (), been a resident of this State for at least one year immediately preceding making this application.

12. My spouse would , would not (), be eligible to receive a retailer's license.

13. This application is for a license to retail cereal malt beverages for consumption on the premises (). For a license to retail cereal malt beverages in original and unopened containers and not for consumption on the premises .

A license fee of \$ 125.00 is enclosed herewith.

Memorandum

To: City Commission
*From: Ryan Carpenter, Director of Special Project/
Assistant to the City Manager*
Date: November 1, 2006
Subject: CDBG 06-PF-612

This addendum is for a sewer extension contract that was agreed on in February of 2003 with BG Consultants, Inc. and the City of Dodge City. The sewer extension was approved last year to be partially funded through Community Block Development Grant Funds, grant 06-PF-612.

Now that the project is partially funded through CDBG, to begin the work and for completion the engineer and the city are required to comply with Civil Rights Laws, Executive Orders, and Regulations which are expressed in the addendum.

Article II - Paragraph 5 refers to scope of services preformed by the engineer that are now partially covered by the CDBG funding and the amount of those funds to not exceed.

The CDBG funds will cover 50% of the project and the city is responsible for the other half of the project costs. Portion of the city's responsibility does revert to the property owners of Happy Homes II [2945 E Trail] and Ranchwood Estates [2905 E Trail].

City at large 20.10% or \$70,611.00
2945 E Trail at 10.76% or \$37,814.00
2905 E Trail at 19.14% or \$67,225.00

Total cost of the project is estimated at \$351,300.00 with \$175,650.00 supplied through CDBG.

**ADDENDUM
AGREEMENT BETWEEN OWNER AND ENGINEER
COMMUNITY DEVELOPMENT BLOCK GRANT
06-PF-612**

The agreement dated February 3, 2003 between BG Consultants, Inc. and the City of Dodge City shall be amended as follows:

Item 1) Scope of Services - The following task will be added:

8. To follow the stated requirements of the CDBG program as it pertains to the approved grant 06-PF-612, to include the following items:
9. To provide Assistance to the Dodge City Engineering Department during construction on a part time basis. Attendance of preconstruction conference, two site visits during construction, and the final inspection will be accommodated by the Consultant.

SUMMARY OF CIVIL RIGHTS LAWS, EXECUTIVE ORDERS AND REGULATIONS

CDBG grantees must assure that all project activities will be administered in compliance with all civil rights laws and regulations. The following are summaries of those parts of the civil rights laws and regulations applicable to CDBG activities.

Title VI of the Civil Rights Act of 1964 provides that no person in the United States shall, on the ground of race, color or national origin, be excluded from participation, be denied benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

Title VIII of the Civil Rights Act of 1968, as amended, provides that no person shall, on the basis of race, color, religion, national origin, handicap or familial status, be discriminated against in housing (and related facilities) provided with Federal assistance or leading practices with respect to residential property when such practices are connected with loans insured or guaranteed by the Federal Government.

Section 109 of the Housing and Community Development Act of 1974, as amended, provides that no person in the United States shall, on the ground of race, color, religion and religious affiliation, national origin, or sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with funds made available under Title I of the Housing and Community Development Act of 1974.

Section 3 of the Housing and Urban Development Act of 1968, as amended, provides that, to the greatest extent feasible, opportunities for training and employment shall be given to recipients of public housing and lower income residents of the unit of local government or the metropolitan area (or non-metropolitan county) in which the project is located; contract work in connection with such projects shall be awarded to business concerns which are owned in substantial part by persons residing in the same metropolitan area (or non-metropolitan county) as the project, employ Section 3 residents in full-time positions, or subcontract with businesses which provide economic opportunities to lower income persons.

Section 503 of Rehabilitation Act of 1973, as amended, provides for the nondiscrimination in contractor employment. All recipients of Federal funds must certify

to the following through all contracts issued:

Affirmative Action for Handicapped Workers

- (a) The contractor will not discriminate against any employee or in regard to any position for which the employee or applicant for employment is qualified. The contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified handicapped individuals without discrimination based upon their physical or mental handicap in all employment practices such as the following: Employment upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.
- (b) The contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.
- (c) In the event of the contractor's noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.
- (d) The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Director, provided by or through the contracting officer. Such notices shall state the contractor's obligation under the law to take affirmative action to employ and advance in employment qualified handicapped employees and applicants for employment, and the rights of applicants and employees.
- (e) The contractor will notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the contractor is bound by the terms of Section 503 of the Rehabilitation Act of 1973, and is committed to take affirmative action to employ and advance in employment physically and mentally handicapped individuals.
- (f) The contractor will include the provisions of this clause in every subcontract or purchase order of \$2,500 or more unless exempted by rules, regulations, or orders of the Secretary issued pursuant to Section 503 of the Act, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any sub-contractor or purchase order as the Director of the Office of Federal Contract Compliance Programs may direct to enforce such provisions, including action for noncompliance.

Section 504 of the Rehabilitation Act of 1973, as amended, provides for nondiscrimination of an otherwise qualified individual solely on the basis of his/her handicap in benefiting from any program or activity receiving Federal financial assistance. All recipients must certify to compliance with all provisions of this Section.

Age Discrimination Act of 1975, no person in the United States shall, on the basis of age, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

Executive Order 11063, as amended, all departments and agencies are directed to take

all action necessary and appropriate to prevent discrimination in housing and related facilities owned or operated by the Federal Government or provided with Federal financial assistance and in the lending practices with respect to residential property and related facilities (including land to be developed for residential use) of lending institutions, insofar as such practices related to loans insured or guaranteed by the Federal Government.

Executive Order 11246, as amended, provides that no person shall be discriminated against on the basis of race, color, religion, sex, or national origin in any phase of employment during the performance of Federal or federally-assisted construction contracts in excess of \$10,000. The following civil rights requirement also apply to CDBG grantees performance: Grantees shall comply with Executive Order 11246, as amended by Executive Order 12086, and the regulations issued pursuant thereto (41 CFR Chapter 60) which provide that no person shall be discriminated against on the basis of race, color, religion, sex, national origin in all phases of employment during the performance of Federal or federally assisted construction contracts. As specified in Executive Order 11246 and the implementing regulations, contractors and sub-contractors on Federal or federally assisted construction contracts shall take affirmative action to ensure fair treatment in employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay, or other forms of compensation and selection for training and apprenticeship.

Section 109, Housing and Community Development (HCD) Act of 1974, as amended, provides that no person in the United States shall, on the grounds of race, color, national origin, religion, or sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with funds made available under Title I of the Housing and Community Development Act of 1974.

Section 912 of the Crantston-Gonzales National Affordable Housing Act amended Section 109 (a) of the HCD Act to prohibit discrimination on the basis of religion or religious affiliation.

Kansas Act Against Discrimination is a policy of the state of Kansas that requires all employers, labor organizations, employment agencies, realtors, financial institutions, or other persons covered by this Act to assure equal opportunities and encourage every citizen regardless of race, religion, color, sex, age, physical disability, national origin, or ancestry, to secure and hold – without discrimination, segregation, or separation – employment in any field of work or labor for which they are properly qualified, the opportunity for full and equal public accommodations, and to assure full and equal opportunities in housing.

Fair Housing Amendments of 1988 added handicapped (disabled) individuals and families with children to the list of protected status categories.

Item 1) **ARTICLE II - Paragraph 5 shall be amended as follows:**

Total payments to the CONSULTANT for Scope of Services Items No. 1 through 8 shall include the actual costs accrued in the performance of the professional services as outlined in this agreement and a profit fee established to be twelve (12%) of the CONSULTANT'S estimated salary and overhead costs, so that the total payments shall not exceed the sum of \$36,300 unless approved by the CITY.

Payments to the Consultant for Scope of Services Item No. 9 include the actual costs accrued in the performance of the professional services as outlined in this agreement and a profit fee established to be twelve (12%) of the CONSULTANT'S estimated salary and overhead costs, so that the total payments shall not exceed the sum of \$5,000 unless approved by the CITY.

IN WITNESS WHEREOF, the parties have signed this Agreement this _____ day
of _____, 2006.

BG Consultants, Inc.

By: _____
Sid Arpin, P.E.
Vice President

City of Dodge City

By: _____
V. James Sherer, Mayor



City of Dodge City

PO Box 880 • Dodge City KS 67801 • Phone: 620/225-8160 • Fax: 620/225-8184

Memorandum

To: City Commissioners
Jeff Pederson, City Manager
From: Paul Lewis, Parks & Recreation Director
cc: Park and Recreation Advisory Board
Date: November 2, 2006
Subject: Temporary Tower Lease Agreement

A handwritten signature in blue ink, appearing to be "P. Lewis", located to the right of the "From:" line.

Attached with this memo is a lease between the City of Dodge City and Westlink Communications granting Westlink permission to install a temporary wireless communications tower on the St. Mary grounds east of Sheridan Activity Center.

Westlink had indicated a desire to enter into an agreement with the City for a permanent site on the water tower located on Central Ave. That tower is scheduled for major renovations so this agreement permits the installation of a temporary tower until such time permanent arrangements can be made.

The lease is a monthly agreement granting Westlink a minimum one year term. After one year, the contract renews automatically for additional one year terms unless a written notice of termination is provided. Westlink can terminate the contract at any time once the grounds have been restored to their previous condition.

Under the agreement, Westlink will pay monthly lease payments to the City in the amount of \$500. The City agrees to allow Westlink to tie into the electrical service at Sheridan and Westlink will reimburse the City for any additional electrical charges. Westlink is responsible for securing and fencing the tower and providing any utilities to the site.

This agreement has been reviewed and approved as to form by the City Attorney. Staff recommends the agreement be approved by the City Commission.

If there are any questions, I'll be happy to answer them or provide additional information if needed.

Lease Agreement

This Lease Agreement is made and entered into this _____ day of _____, 2006, by and between the city of Dodge City, Kansas ("Lessor"), and WestLink Communications, LLC, 120 West Kansas Avenue, Ulysses, Kansas 67880 ("Lessee").

I

Description of Property

Lessor hereby leases to and grants and conveys permission to Lessee to operate and install a temporary Mobile Tower Unit (MTU) as required and necessary to support Lessee's wireless telecommunications system on the tract of land as generally identified on the attached diagram, attached hereto and marked Exhibit A.

Lessee shall use four (4) areas of the above referenced tract of land: A 30' x 30' area on which the temporary MTU will be located, and three (3) areas of 8' x 15' for anchors for the guy wires that secure the MTU all as described in the attached diagram, attached hereto and marked Exhibit B. Lessee's placement of the MTU and anchor points shall not interfere with the Sheridan Complex uses. Lessor reserves the right to approve actual tower and anchor point locations, which approval shall not be unreasonably withheld. Lessee agrees that upon the reasonable request of Lessor, the Lessee shall at its cost and expense relocate the tower and anchor points should the original placement be found to interfere or obstruct the Lessor's use and enjoyment of adjacent property or facilities. Lessee shall be totally responsible for site selections for the MTU and anchor points and for all construction, repair and maintenance thereof, shall not allow any lien or other encumbrance to attach to said premises and hereby releases and discharges Lessor of and from any and all costs, expenses and damages the Lessee may incur as a result of or in any manner whatsoever arising out of the site selection and/or the construction, repair and maintenance thereof. The Lessee understands and acknowledges that by Lessor's approval of the location of the MTU and/or anchor points Lessor makes no representation or warranty regarding the fitness of such locations for Lessee's propose use thereof, or of the condition of the premises or its suitability for the Lessee's construction thereon and use thereof; that Lessor's lease of the premises and grant of permission to Lessee therefore are for the premises in an "as is and where is" condition; that Lessee has prior to the execution of this lease carefully and thoroughly inspected the premises and has conducted any and all tests, observations and demonstrations as it deems appropriate and necessary and that Lessee accepts the premises in an "as is and where is" condition.

II
Term

The term of this Lease Agreement shall commence November 1, 2006, and continue monthly hereafter until such time as the Lessee has removed its tower and equipment from the premises and has restored the same to its original condition as approved by the Lessor, which approval shall not be unreasonably withheld, delayed or conditioned, or until terminated as hereinafter provided.

III
Lease Payments

A monthly Lease payment in the amount of \$500.00 shall be made by the Lessee to the Lessor, payable on or before the fifteenth (15th) of each month, commencing November 1, 2006, and continuing monthly thereafter during the term of this agreement.

IV
Installation and Maintenance of Lessee's
Building, Structures and Equipment

Lessor agrees and hereby grants Lessee free access to the premises for the purpose of constructing, inspecting and maintaining the facilities as set forth in Section I. It is agreed that only engineers and contractors of Lessee, including their subcontractors, or persons under their direct supervision, and employees of Lessee, will be permitted to enter the property. This permission is limited to the purposes of construction, inspection and maintenance of the equipment and facilities to be located thereon. It is further agreed that Lessee's construction and installation will comply with all the applicable rules and regulations of the Federal Communications Commission, State Corporation Commission of the State of Kansas, and all applicable local Electrical Codes, Building Codes and Zoning requirements.

V
Sublease

Lessee shall not assign this lease or sublet the premises or any part thereof, except to an affiliate of Lessee, without first obtaining the written consent of the Lessor. Lessee shall provide prior written notice to Lessor of any proposed assignment.

VI

Site Cleanup on Termination

Lessee shall remove all buildings, structures, equipment and fencing placed upon the premises and shall restore the premises as nearly as possible to its original condition within sixty (60) days after termination of this lease. Electrical and phone service shall be disconnected.

VII

Hazardous Substances

Lessor states that based upon it's personal knowledge since Lessor's acquisition of the premises the following are true but he makes no representation or warranty concerning same: (1) no dangerous, toxic or hazardous pollutants, contaminants, chemicals, wastes, materials, or substances, as defined in or governed by the provisions of any federal, state or local law, statute, code, ordinance, regulation, requirement or rule relating thereto (collectively, the "Environmental Regulations"), including without limitation ureaformaldehyde, dioxins, polychlorinated biphenyls, asbestos, asbestos-containing materials, nuclear fuel wastes, and petroleum products, or any other wastes or substances which would subject the owner or occupant of the Premises to any damages, penalties or liabilities under any applicable environmental regulation (collectively, the "Hazardous Substances") are now or have ever been located, produced, treated, transported, incorporated, discharged emitted, released, deposited or disposed of in, upon, under, over or from the Premises, (2) no present threat exists of a discharge, release or emission of a Hazardous Substance upon or from the Premises into the environment, (3) the Premises have not ever been used as a mine, a landfill, a dump or any other disposal facility, an industrial manufacturing facility, or a gasoline service station, (4) no underground storage tank is now located in or under the Premises, or has previously been located therein but has been removed there from, (5) no violation of any Environmental Regulation now exists or has ever existed in, upon, under, over or from the Premises, (6) no notice of any such violation or alleged violation of an Environmental Regulation now exists or has ever existed in, upon, under, over or from the Premises, (7) no notice of any such violation or alleged violation of an Environmental Regulation has been issued or given by any governmental entity or agency which in any way relates to Hazardous Substances, (8) no person, party or governmental agency or entity has given any notice of or asserted any claim, cause of action, penalty, cost or demand for payment or compensation, whether or not involving any injury or threatened injury to human health, the environment or natural resources, resulting or allegedly resulting from any activity or event described in (1) above, (9) there are not now, nor have there ever been, any actions, suits, proceedings or damage settlements relating in any way to Hazardous Substances in, upon, under, over or from the Premises, (10) the Premises are not listed in the United States Environmental Protection Agency's National Priorities List of hazardous waste

sites or any other state or local government agency, and (11) the Premises are not subject to any lien or claim for lien in favor of any governmental entity or agency as a result of any release or threatened release of any Hazardous Substance.

VIII

Lessor's Indemnity

Lessor hereby agrees to indemnify and hold Lessee harmless from any damages, claims or causes of action brought against the Lessor which are unrelated to the Lessee's lease, possession, use or occupancy of the premises which may arise during the term of this Lease as a result of any action by the Lessor, his agents, servants or employees, and to pay all reasonable costs and expenses, including but not limited to reasonable attorney's fees and court costs.

IX

Lessee's Insurance and Indemnity

During the term of this lease and any extension thereof, Lessee shall maintain in full force and effect comprehensive public liability insurance coverages in the amount of not less than \$1,000,000 insuring against personal injury (including death) and property damage claims or causes of action which in any manner arise out of the Lessee's possession or use of the premises, which policy shall name the Lessor as an additional insured. In addition, Lessee shall maintain in full force and effect worker's compensation coverage in accordance with Kansas law and shall provide any property damage for its equipment and facilities located on the premises as it deems necessary and appropriate. Lessee does hereby release and discharge the Lessor of and from any and all claims, causes of action, costs, expenses and/or damages which in any manner whatsoever arise out of or in connection with the Lessee's use, possession and occupancy of the premises and equipment, improvements and facilities located thereon, except only such damages which are solely and directly the result of the negligence of the Lessor, its agents, servants and employees. Lessee hereby agrees to indemnify and hold Lessor harmless from any damages, claims or causes of action which may arise during the term of this Lease as a result of any action or omission by the Lessee, his agents, servants or employees, including but not limited to any claim or cause of action which in any manner arise out of the Lessee's lease, possession, use and occupancy of the premises and to pay all reasonable costs and expenses, including but not limited to reasonable attorney's fees and court costs.

X

Notices

All notices which are required to be sent under the terms of this agreement, shall be sent by restricted mail, return receipt requested to the following addresses:

If to Lessor:

With copy to (which alone shall not constitute notice):

City of Dodge City
Attention: City Manager
P.O. Box 880
Dodge City, KS 67801

Ken W. Strobel, City Attorney
Williams Law Firm
P.O. Box 39
Dodge City, KS 67801

If to Lessee:

With copy to (which alone shall not constitute notice):

WestLink Communications, LLC
Attn: Richard K. Veach
P.O. Box 707
120 West Kansas Avenue
Ulysses, Kansas 67880
620.356.3211

WestLink Communications, LLC
Attn: Bill Hayden
1106 East 26th Street, Suite 10
Hays, Kansas 67601
785.365.5000

XI

Utilities

Lessee shall be responsible, at Lessee's sole expense, for securing all electrical and telephone utilities lines, connections, meters and service required for its use of the premises. All such utilities shall be installed in underground buried plastic conduit. The Lessee's electrical utility service charges for operation of its equipment shall be reimbursed to the Lessor monthly based on readings of the Sheridan Complex electric meter.

The telephone utility shall be installed by Lessee in Lessee's own name and at Lessee's sole cost and expenses.

XII

Fencing

Lessee shall install and maintain fencing around the four (4) utilized pieces of land. Around the MTU six (6) foot high fencing shall be used. Around the anchor sites, three (3) foot high fencing shall be used. Lessee acknowledges and advises that in its sole discretion it has determined that such fencing is adequate to protect its equipment, facilities and improvements located on the premises from vandalism, trespass or other causes of damage by third parties, and further acknowledges and states that Lessor has no responsibility whatsoever to supervise, monitor, protect or provide additional security to prevent such damages except only for damages solely and directly resulting from negligent acts or omissions of Lessor's agents, servants or employees.

XIII

Maintenance

Lessee shall maintain in a clean, good and proper condition all areas within Lessee's installed fencing. Additionally, Lessee shall maintain the areas directly outside the fencing.

XIV

Contingency

This lease agreement is contingent upon Lessee receiving all necessary permits and licenses, including, but not limited to, FAA, FCC and city zoning requirements. Any other provisions herein contained notwithstanding, no lease payment shall be due until receipt by Lessee of final approval. The date of receipt of such final approval shall be the anniversary date of this agreement and the date payment is due pursuant to Article III.

XV

Termination

This agreement may be terminated at any time prior to the expiration of the term hereof as set out in paragraph II above as follows:

- a) By mutual written agreement of the parties; or
- b) By either party in the event of a breach of any of the terms and conditions of this agreement 15 days following service of written notice describing the breach and a failure by the breaching party to correct the breach with such 15 day period; or
- c) By the Lessor at anytime following November 1, 2007, by providing at least 90 days prior written notice of Lessor's intent to terminate.

XVI

Governing Law

This agreement shall be governed by the laws of the State of Kansas.

(Signature Page Follows)

Executed on the _____ day of _____, 20____.

“LESSOR”

Company Name: City of Dodge City, Kansas

By: _____
Printed Name: V. James Sherer
Title: Mayor

Attest: _____
Printed Name: Nannette Pogue, City Clerk

Date: _____

“LESSEE”

Company name: WestLink Communications, LLC
By: _____
Printed Name: Richard K. Veach
Title: CEO

Date: _____

ACKNOWLEDGMENT

STATE OF KANSAS, FORD COUNTY, ss:

BE IT REMEMBERED, that on this _____ day of October, A.D. 2006, before me, the undersigned, a Notary Public in and for the County and State aforesaid, came **V. James Sherer, Mayor** and **Nannette Pogue, CITY CLERK** of City of Dodge City, who are personally known to me to be the same persons who executed the within instrument of writing and such persons duly acknowledged the execution of the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal, the day and year last above written.

Notary Public

My Appointment Expires:

STATE OF KANSAS)
) ss:
COUNTY OF GRANT)

Richard K. Veach, of lawful age, being first duly sworn, upon oath, deposes and says that he is the CEO of WestLink Communications, LLC, and that he has read the above Lease Agreement, and the statements contained therein are true and correct to the best of his knowledge, information and belief.

Richard K. Veach

Subscribed and sworn to before me this _____ day of _____, 20__.

Notary Public

My Commission Expires:

Memorandum

To: Jeff Pederson, City Manager
From: Ken W. Strobel, City Attorney 
Date: November 1, 2006
Subject: Adoption of OMI Contract Amendment

Jeff:

Enclosed is an amendment to the existing management services agreement which the City has had with OMI for several years. As you know, the OMI legal counsel and I have been working for some time to finalize the new agreement for 2007. Frankly, I think we are very close to finalizing a new agreement and I am optimistic that such will be in place before January 1, 2007.

I am, however, recommending adoption of the enclosed amendment to the old agreement at this time, which would allow us to pay the increased base fee rate to OMI for the additional services they have performed during the current year, and would allow us to focus our efforts on finalizing the new agreement. As you will recall, when the new proposed OMI contract was presented to the commission earlier this year, the commission had several questions which mainly focused on the term of the proposed agreement being requested by OMI, which was for a period of ten years. OMI's legal counsel and myself have been working on that issue and, as I stated above, are close to reaching agreement with regard to the duration of the new contract term.

Basically, the enclosed amendment makes the following adjustments to the old contract;

- Increases the base fee to \$937,740 for calendar year 2006. This is the base fee we had reviewed and basically agreed to for the year, subject to clarification of the term issues as set forth in the OMI 2007 proposal.

As Joe's original memo explained, although this fee represents a sizable increase over last year's base fee, we felt the increase as justified as a result of some wage adjustments for their employees made by OMI at the beginning of the year, which were apparently desperately needed. Frankly, the wage adjustments that were made were long overdue and assure the City of a continuation of the excellent service we received from the present OMI personnel.

In addition, approximately \$150,000 of the base fee increase reflects OMI's assumption of the responsibilities for the purchase and application of gypsum to the irrigated farm fields, which responsibilities previously had been the City's. Also, during the course of this year, OMI has actually been performing a number of additional duties and responsibilities with regard to the waste water plant improvements, even though those additional duties are not included in the scope of work as set forth in the old contract.

- The amendment also provides for the expiration of the old agreement at the end of the current year, as well as a mechanism for establishing a base fee for 2007 in the unlikely event we are unable to reach a mutual agreement for next year by December 31, 2006. As you can see, the amendment provides that in the absence a new mutual agreement, OMI would continue services for the year, and the base fee for the 2007 calendar year would be the 2006 fee increased by a cost of living formula, but not to exceed a total increase of 3.5%.

I am also attaching a copy of Joe's original memorandum regarding the base increase, and will be happy to provide any additional information you or the commission may desire.

Again, it would be my recommendation that the proposed amendment be presented to the City Commission at the November 6 meeting if at all possible, with a recommendation for approval. As you can see, OMI has already approved the proposed amendment.

KWS/skp

c: Joe Finley
Catherine Lang, OMI Legal Counsel

AMENDMENT NO. 19
to the
AGREEMENT
for
OPERATIONS, MAINTENANCE, AND MANAGEMENT SERVICES
for the
CITY OF DODGE CITY, KANSAS

THIS AMENDMENT NO. 19 to the Agreement for Operations, Maintenance and Management Services for the City of Dodge City, Kansas (the "Agreement") is made effective this 1st day of January, 2006, between the City of Dodge City, Kansas (hereinafter "Owner"), whose address for any formal notice is P.O. Box 880, Dodge City, Kansas 67801-0880 and Operations Management International, Inc. (hereinafter "OMI") whose address for any formal notice is 9193 South Jamaica Street, Suite 400, Englewood, Colorado 80112.

NOW THEREFORE, Owner and OMI agree to amend the Agreement as follows:

- 1.1 Article 2.4 is deleted in its entirety and replaced with the following Article 2.4.
 - 1.2 Provide and document all repairs for the project, provided the total amount OMI shall be required to pay does not exceed Sixty Five Thousand Dollars (\$65,000.00) for the contract year January 1, 2006 to December 31, 2006. The Owner shall pay for all repairs in excess of the repairs limit. OMI will notify the Owner when eighty percent (80%) of the budgeted repairs funds are spent.
- 1.1 A new Article 2.16 is added as follows:
 - 1.2 Acquire and provide gypsum application on behalf of Owner, provided the total amount OMI shall be required to pay does not exceed One Hundred Fifty Thousand Dollars (\$150,000.00) for the contract year January 1, 2006 to December 31, 2006, which amount is included in base fee as set forth in paragraph 4.1. The Owner shall be responsible for any such costs exceeding \$150,000.00, during the contract year.
- 1.1 Article 4.1 is deleted in its entirety and replaced with the following Article 4.1:
 - 1.2 The Owner shall pay to OMI as compensation for services performed under this Amendment a base fee of Nine Hundred Thirty Seven Thousand Seven Hundred Forty Dollars (\$937,740.00) for the contract year January 1, 2006 through December 31, 2006. Notwithstanding any other provisions of this Agreement to the contrary, the parties agree that this Agreement shall expire on December 31, 2006. In anticipation of a new

Agreement being reached through good faith negotiations, the parties further agree that in the event a new Agreement is not in place by December 31, 2006, OMI will continue it's services to the Owner as provided herein for a period of not less than one calendar year from the above expiration date (the "Extended Contract Term"), unless earlier terminated by mutual written agreement. The parties agree that good faith negotiations resulting in mutual Agreement is the preferred methodology to be used to determine changes in the Base Fee and other contract provisions. So long as there is no change in the Agreement scope of services and in the event that Owner and OMI fail to agree, the Base Fee for the Extended Contract Term shall be the amount as determined by the application of the Base Fee adjustment formula shown in Appendix F, or the amount of the prior years actual Base Fee increased by three and half percent (3 1/2%), whichever amount is less. Upon such agreement between the parties as to the new contract, OMI shall issue an invoice retroactively adjusting the above base fee amount.

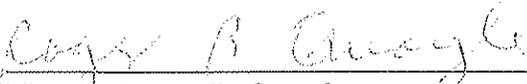
1.1 Appendix F is hereby added in its entirety:

This Amendment No. 19 together with the Agreement constitutes the entire agreement between the Parties and supersedes all prior oral and written understandings with respect to the subject matter set forth herein. Unless specifically stated all other terms and conditions of the Agreement shall remain in full force and effect. Neither this Amendment nor the Agreement may be modified except in writing signed by an authorized representative of the Parties.

The Parties, intending to be legally bound, indicate their approval of the Amendment by their signatures below.

OPERATIONS MANAGEMENT
INTERNATIONAL, INC.

CITY OF DODGE CITY, KANSAS



Name: Roger B. Quayle
Title: Sr. Vice President
Date: 10/27/06

Name: Jim Sherer
Title: Mayor
Date:

CL
10/25/06

APPENDIX F
BASE FEE ADJUSTMENT FORMULA

$$ABF = BF \times AF$$

Where:

BF = Base Fee specified in Article 4.1

ABF = Adjusted Base Fee

AF = Adjustment Factor as determined by the formula:

$$AF = [((E-E_0)/E_0) .5 + ((C-C_0)/C_0) .5] + .02 + 1.0$$

E_0 = ECI for Compensation for Civilians Workers, Not Seasonally Adjusted (Employment Cost Index) for the month that is eighteen (18) months prior to the beginning of the period for which an ABF is being calculated as published by U.S. Department of Labor, Bureau of Labor Statistics in the Detailed Report, which is the month of June.

E = ECI for Compensation for Civilians Workers, Not Seasonally Adjusted (Employment Cost Index) for the month that is six (6) months prior to the beginning of the period for which an ABF is being calculated as published by U.S. Department of Labor, Bureau of Labor Statistics in the Detailed Report, which is the month of June.

C_0 = C_0 = Consumer Price Index for all urban consumers as published by U.S. Department of Labor, Bureau of Labor Statistics in the CPI Detailed Report for the month that is eighteen (18) months prior to the beginning of the period for which an ABF is being calculated, which is the month of June.

C = Consumer Price Index for all urban consumers as published by U.S. Department of Labor, Bureau of Labor Statistics in the CPI Detailed Report for the month that is six (6) months prior to the

beginning of the period for which an Adjusted Base Fee is being calculated, which is the month of June.

Memorandum

March 13, 2006

TO: Jeff Pederson, City Manager

FROM: Joseph E. Finley, P.E., Director of Public Works *JEF*

RE: OMI Contract

The City originally contracted with OMI to run the waste water treatment plant in 1987. Since that time, an amendment to the contract is approved each year to reflect any additional change in scope of services and adjust the contract fees necessary for OMI to perform the required services as outlined in the contract.

For sometime I have been concerned that the original contract and amendments did not accurately reflect the actual duties performed and required by OMI to properly run the waste water treatment plant. Last year was the first full year that the new plant was in operation and has given their plant manager an opportunity to assess what is needed to run the new plant, continues current operation with the old plant, assess additional testing requirements, and assess what additional costs are necessary with the addition of new pivots and additional waste water for National Beef.

With this in mind, I requested that OMI rework their contract to include the work they currently perform. In addition, the city currently contracts to with at third party for gypsum treatment. We requested that OMI place this in their contract. As we only get one bidder each year, our thought was that it would save us the time and expense of bidding each year.

OMI's revised contract is attached for approval. As you will notice the increase is substantial. However, the additional line item for gypsum is around \$160,000. Most of the increase is associated with the additional workload associated with additional pivots being added, additional maintenance required, and additional testing to ensure compliance. In addition, OMI recently conducted their own wage survey to insure adequate compensation was being paid to the employees. Their study revealed a need to increase their wages to insure their current staff would stay with the company.

Below is a comparison of the 2005 contract and 2006 contract fees.

2005 Contract Fees	\$716,509
Current Monthly Fees	\$ 59,709
2006 Contract Fees	\$937,740
Proposed Monthly Fees	\$ 78,145

While this is a substantial increase, I believe that with the addition of OMI being responsible for the gypsum application and the additional work we have required of them, the cost is equitable. Staff would recommend approval of the new contract with OMI in the amount of \$937,740. Should you have any questions, please let me know.

JF/jlg

The Health Consequences of Involuntary Exposure to Tobacco Smoke

A Report of the Surgeon General



Department of Health and Human Services



Centers for Disease Control and Prevention
Coordinating Center for Health Promotion
National Center for Chronic Disease Prevention and Health Promotion
Office on Smoking and Health

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The Health Consequences of Involuntary Exposure to Tobacco Smoke

A Report of the Surgeon General

2006

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Office of the Surgeon General
Rockville, MD

Message from Michael O. Leavitt

Secretary of Health and Human Services

This Surgeon General's report returns to the topic of the health effects of involuntary exposure to tobacco smoke. The last comprehensive review of this evidence by the Department of Health and Human Services (DHHS) was in the 1986 Surgeon General's report, *The Health Consequences of Involuntary Smoking*, published 20 years ago this year. This new report updates the evidence of the harmful effects of involuntary exposure to tobacco smoke. This large body of research findings is captured in an accompanying dynamic database that profiles key epidemiologic findings, and allows the evidence on health effects of exposure to tobacco smoke to be synthesized and updated (following the format of the 2004 report, *The Health Consequences of Smoking*). The database enables users to explore the data and studies supporting the conclusions in the report. The database is available on the Web site of the Centers for Disease Control and Prevention (CDC) at <http://www.cdc.gov/tobacco>. I am grateful to the leadership of the Surgeon General, CDC's Office on Smoking and Health, and all of the contributors for preparing this important report and bringing this topic to the forefront once again.

Secondhand smoke, also known as environmental tobacco smoke, is a mixture of the smoke given off by the burning end of tobacco products (sidestream smoke) and the mainstream smoke exhaled by smokers. People are exposed to secondhand smoke at home, in the workplace, and in other public places such as bars, restaurants, and recreation venues. It is harmful and hazardous to the health of the general public and particularly dangerous to children. It increases the risk of serious respiratory problems in children, such as a greater number and severity of asthma attacks and lower respiratory tract infections, and increases the risk for middle ear infections. It is also a known human carcinogen (cancer-causing agent). Inhaling secondhand smoke causes lung cancer and coronary heart disease in nonsmoking adults.

We have made great progress since the late 1980s in reducing the involuntary exposure of nonsmokers in this country to secondhand smoke. The proportion of nonsmokers aged 4 and older with a blood cotinine level (a metabolite of nicotine) indicating exposure has declined from 88 percent in 1988–1991 down to 43 percent in 2001–2002, a decline that exceeds the *Healthy People 2010* objective for this measure. Despite the great progress that has been made, involuntary exposure to secondhand smoke remains a serious public health hazard that can be prevented by making homes, workplaces, and public places completely smoke-free. As of the year 2000, more than 126 million residents of the United States aged 3 or older still are estimated to be exposed to secondhand smoke. Smoke-free environments are the most effective method for reducing exposures. *Healthy People 2010* objectives address this issue and seek optimal protection of nonsmokers through policies, regulations, and laws requiring smoke-free environments in all schools, workplaces, and public places.

Foreword

This twenty-ninth report of the Surgeon General documents the serious and deadly health effects of involuntary exposure to tobacco smoke. Secondhand smoke is a major cause of disease, including lung cancer and coronary heart disease, in healthy nonsmokers.

In 2005, it was estimated that exposure to secondhand smoke kills more than 3,000 adult nonsmokers from lung cancer, approximately 46,000 from coronary heart disease, and an estimated 430 newborns from sudden infant death syndrome. In addition, secondhand smoke causes other respiratory problems in nonsmokers such as coughing, phlegm, and reduced lung function. According to the CDC's National Health Interview Survey in 2000, more than 80 percent of the respondents aged 18 years or older believe that secondhand smoke is harmful and nonsmokers should be protected in their workplaces.

Components of chemical compounds in secondhand smoke, including nicotine, carbon monoxide, and tobacco-specific carcinogens, can be detected in body fluids of exposed nonsmokers. These exposures can be controlled. In 2005, CDC released the *Third National Report on Human Exposure to Environmental Chemicals*, which found that the median cotinine level (a metabolite of nicotine) in nonsmokers had decreased across the life stages: by 68 percent in children, 69 percent in adolescents, and 75 percent in adults, when samples collected between 1999 and 2002 were compared with samples collected a decade earlier. These dramatic declines are further evidence that smoking restrictions in public places and workplaces are helping to ensure a healthier life for all people in the United States.

However, too many people continue to be exposed, especially children. The recent data indicate that median cotinine levels in children are more than twice those of adults, and non-Hispanic blacks have levels that are more than twice as high as those of Mexican Americans and non-Hispanic whites. These disparities need to be better understood and addressed.

Research reviewed in this report indicates that smoke-free policies are the most economic and effective approach for providing protection from exposure to secondhand smoke. But do they provide the greatest health impact. Separating smokers and nonsmokers in the same airspace is not effective, nor is air cleaning or a greater exchange of indoor with outdoor air. Additionally, having separately ventilated areas for smoking may not offer a satisfactory solution to reducing workplace exposures. Policies prohibiting smoking in the workplace have multiple benefits. Besides reducing exposure of nonsmokers to secondhand smoke, these policies reduce tobacco use by smokers and change public attitudes about tobacco use from acceptable to unacceptable.

Research indicates that the progressive restriction of smoking in the United States to protect nonsmokers has had the additional health impact of reducing active smoking. In November 2005, CDC's Tobacco-Free Campus policy took full effect in all facilities owned by CDC in the Atlanta area. As the Director of the nation's leading health promotion and disease prevention agency, I am proud to support this effort. With this commitment, CDC continues to protect the health and safety of all of its employees and serves as a role model for workplaces everywhere.

Julie Louise Gerberding, M.D., M.P.H.
Director
Centers for Disease Control and Prevention
and
Administrator
Agency for Toxic Substances and Disease Registry

Preface

*from the Surgeon General,
U.S. Department of Health and Human Services*

Twenty years ago when Dr. C. Everett Koop released the Surgeon General's report, *The Health Consequences of Involuntary Smoking*, it was the first Surgeon General's report to conclude that involuntary exposure of nonsmokers to tobacco smoke causes disease. The topic of involuntary exposure of nonsmokers to secondhand smoke was first considered in Surgeon General Jesse Steinfeld's 1972 report, and by 1986, the causal linkage between inhaling secondhand smoke and the risk for lung cancer was clear. By then, there was also abundant evidence of adverse effects of smoking by parents on their children.

Today, massive and conclusive scientific evidence documents adverse effects of involuntary smoking on children and adults, including cancer and cardiovascular diseases in adults, and adverse respiratory effects in both children and adults. This 2006 report of the Surgeon General updates the 1986 report, *The Health Consequences of Involuntary Smoking*, and provides a detailed review of the epidemiologic evidence on the health effects of involuntary exposure to tobacco smoke. This new report also uses the revised standard language of causality that was applied in the 2004 Surgeon General's report, *The Health Consequences of Smoking*.

Secondhand smoke is similar to the mainstream smoke inhaled by the smoker in that it is a complex mixture containing many chemicals (including formaldehyde, cyanide, carbon monoxide, ammonia, and nicotine), many of which are known carcinogens. Exposure to secondhand smoke causes excess deaths in the U.S. population from lung cancer and cardiac related illnesses. Fortunately, exposures of adults are declining as smoking becomes increasingly restricted in workplaces and public places. Unfortunately, children continue to be exposed in their homes by the smoking of their parents and other adults. This exposure leads to unnecessary cases of bronchitis, pneumonia and worsened asthma. Among children younger than 18 years of age, an estimated 22 percent are exposed to secondhand smoke in their homes, with estimates ranging from 11.7 percent in Utah to 34.2 percent in Kentucky.

As this report documents, exposure to secondhand smoke remains an alarming public health hazard. Approximately 60 percent of nonsmokers in the United States have biologic evidence of exposure to secondhand smoke. Yet compared with data reviewed in the 1986 report, I am encouraged by the progress that has been made in reducing involuntary exposure in many workplaces, restaurants, and other public places. These changes are most likely the major contributing factors to the more than 75 percent reduction in serum cotinine levels that researchers have observed from 1988 to 1991. However, more than 126 million nonsmokers are still exposed. We now have substantial evidence on the efficacy of different approaches to control exposure to secondhand smoke. Restrictions on smoking can control exposures effectively, but technical approaches involving air cleaning or a greater exchange of indoor with outdoor air cannot. Consequently, nonsmokers need protection through the restriction of smoking in public places and workplaces and by a voluntary adherence to policies at home, particularly to eliminate exposures of children. Since the release of the 1986 Surgeon General's report, the public's attitude and social norms toward secondhand smoke exposure have changed significantly—a direct result of the growing body of scientific evidence on the health effects of exposure to secondhand smoke that is summarized in this report.

Finally, clinicians should routinely ask about secondhand smoke exposure, particularly in susceptible groups or when a child has had an illness caused by secondhand smoke, such as pneumonia. Because of the high levels of exposure among young children, their exposure should be considered a significant pediatric issue. Additionally, exposure to secondhand smoke poses significant risks for people with lung and heart disease. The large body of evidence documenting that secondhand smoke exposures produce substantial and immediate effects on the cardiovascular system indicates that even brief exposures could pose significant acute risks to older adults or to others at high risk for cardiovascular disease. Those caring for relatives with heart disease should be advised not to smoke in the presence of the sick relative.

An environment free of involuntary exposure to secondhand smoke should remain an important national priority in order to reach the *Healthy People 2010* objectives.

Richard Carmona, M.D., M.P.H., F.A.C.S.
Surgeon General

Executive Summary

The topic of passive or involuntary smoking was first addressed in the 1972 U.S. Surgeon General's report (*The Health Consequences of Smoking*, U.S. Department of Health, Education, and Welfare [USDHEW] 1972), only eight years after the first Surgeon General's report on the health consequences of active smoking (USDHEW 1964). Surgeon General Dr. Jesse Steinfeld had raised concerns about this topic, leading to its inclusion in that report. According to the 1972 report, nonsmokers inhale the mixture of sidestream smoke given off by a smoldering cigarette and mainstream smoke exhaled by a smoker, a mixture now referred to as "secondhand smoke" or "environmental tobacco smoke." Cited experimental studies showed that smoking in enclosed spaces could lead to high levels of cigarette smoke components in the air. For carbon monoxide (CO) specifically, levels in enclosed spaces could exceed levels then permitted in outdoor air. The studies supported a conclusion that "an atmosphere contaminated with tobacco smoke can contribute to the discomfort of many individuals" (USDHEW 1972, p. 7). The possibility that CO emitted from cigarettes could harm persons with chronic heart or lung disease was also mentioned.

Secondhand tobacco smoke was then addressed in greater depth in Chapter 4 (Involuntary Smoking) of the 1975 Surgeon General's report, *The Health Consequences of Smoking* (USDHEW 1975). The chapter noted that involuntary smoking takes place when nonsmokers inhale both sidestream and exhaled mainstream smoke and that this "smoking" is "involuntary" when "the exposure occurs as an unavoidable consequence of breathing in a smoke-filled environment" (p. 87). The report covered exposures and potential health consequences of involuntary smoking, and the researchers concluded that smoking on buses and airplanes was annoying to nonsmokers and that involuntary smoking had potentially adverse consequences for persons with heart and lung diseases. Two studies on nicotine concentrations in nonsmokers raised concerns about nicotine as a contributing factor to atherosclerotic cardiovascular disease in nonsmokers.

The 1979 Surgeon General's report, *Smoking and Health: A Report of the Surgeon General* (USDHEW 1979), also contained a chapter entitled "Involuntary Smoking." The chapter stressed that "attention to involuntary smoking is of recent vintage, and only limited information regarding the health effects of

such exposure upon the nonsmoker is available" (p. 11–35). The chapter concluded with recommendations for research including epidemiologic and clinical studies. The 1982 Surgeon General's report specifically addressed smoking and cancer (U.S. Department of Health and Human Services [USDHHS] 1982). By 1982, there were three published epidemiologic studies on involuntary smoking and lung cancer, and the 1982 Surgeon General's report included a brief chapter on this topic. That chapter commented on the methodologic difficulties inherent in such studies, including exposure assessment, the lengthy interval during which exposures are likely to be relevant, and accounting for exposures to other carcinogens. Nonetheless, the report concluded that "Although the currently available evidence is not sufficient to conclude that passive or involuntary smoking causes lung cancer in nonsmokers, the evidence does raise concern about a possible serious public health problem" (p. 251).

Involuntary smoking was also reviewed in the 1984 report, which focused on chronic obstructive pulmonary disease and smoking (USDHHS 1984). Chapter 7 (Passive Smoking) of that report included a comprehensive review of the mounting information on smoking by parents and the effects on respiratory health of their children, data on irritation of the eye, and the more limited evidence on pulmonary effects of involuntary smoking on adults. The chapter began with a compilation of measurements of tobacco smoke components in various indoor environments. The extent of the data had increased substantially since 1972. By 1984, the data included measurements of more specific indicators such as acrolein and nicotine, and less specific indicators such as particulate matter (PM), nitrogen oxides, and CO. The report reviewed new evidence on exposures of nonsmokers using biomarkers, with substantial information on levels of cotinine, a major nicotine metabolite. The report anticipated future conclusions with regard to respiratory effects of parental smoking on child respiratory health (Table 1.1).

Involuntary smoking was the topic for the entire 1986 Surgeon General's report, *The Health Consequences of Involuntary Smoking* (USDHHS 1986). In its 359 pages, the report covered the full breadth of the topic, addressing toxicology and dosimetry of tobacco smoke; the relevant evidence on active smoking;

Table 1.1 Conclusions from previous Surgeon General's reports on the health effects of secondhand smoke exposure

Disease and statement	Surgeon General's report
Coronary heart disease: "The presence of such levels" as found in cigarettes "indicates that the effect of exposure to carbon monoxide may on occasion, depending upon the length of exposure, be sufficient to be harmful to the health of an exposed person. This would be particularly significant for people who are already suffering from. . .coronary heart disease." (p. 7)	1972
Chronic respiratory symptoms (adults): "The presence of such levels" as found in cigarettes "indicates that the effect of exposure to carbon monoxide may on occasion, depending upon the length of exposure, be sufficient to be harmful to the health of an exposed person. This would be particularly significant for people who are already suffering from chronic bronchopulmonary disease. . . ." (p. 7)	1972
Pulmonary function: "Other components of tobacco smoke, such as particulate matter and the oxides of nitrogen, have been shown in various concentrations to affect adversely animal pulmonary. . .function. The extent of the contributions of these substances to illness in humans exposed to the concentrations present in an atmosphere contaminated with tobacco smoke is not presently known." (pp. 7-8)	1972
Asthma: "The limited existing data yield conflicting results concerning the relationship between passive smoke exposure and pulmonary function changes in patients with asthma." (p. 13)	1984
Bronchitis and pneumonia: "The children of smoking parents have an increased prevalence of reported respiratory symptoms, and have an increased frequency of bronchitis and pneumonia early in life." (p. 13)	1984
Pulmonary function (children): "The children of smoking parents appear to have measurable but small differences in tests of pulmonary function when compared with children of nonsmoking parents. The significance of this finding to the future development of lung disease is unknown." (p. 13)	1984
Pulmonary function (adults): ". . .some studies suggest that high levels of involuntary [tobacco] smoke exposure might produce small changes in pulmonary function in normal subjects. . . . Two studies have reported differences in measures of lung function in older populations between subjects chronically exposed to involuntary smoking and those who were not. This difference was not found in a younger and possibly less exposed population." (p. 13)	1984
Acute respiratory infections: "The children of parents who smoke have an increased frequency of a variety of acute respiratory illnesses and infections, including chest illnesses before 2 years of age and physician-diagnosed bronchitis, tracheitis, and laryngitis, when compared with the children of nonsmokers." (p. 13)	1986
Bronchitis and pneumonia: "The children of parents who smoke have an increased frequency of hospitalization for bronchitis and pneumonia during the first year of life when compared with the children of nonsmokers." (p. 13)	1986
Cancers other than lung: "The associations between cancers, other than cancer of the lung, and involuntary smoking require further investigation before a determination can be made about the relationship of involuntary smoking to these cancers." (p. 14)	1986
Cardiovascular disease: "Further studies on the relationship between involuntary smoking and cardiovascular disease are needed in order to determine whether involuntary smoking increases the risk of cardiovascular disease." (p. 14)	1986

Table 1.1 Continued

Disease and statement	Surgeon General's report
Chronic cough and phlegm (children): "Chronic cough and phlegm are more frequent in children whose parents smoke compared with children of nonsmokers." (p. 13)	1986
Chronic obstructive pulmonary disease (COPD): "Healthy adults exposed to environmental tobacco smoke may have small changes on pulmonary function testing, but are unlikely to experience clinically significant deficits in pulmonary function as a result of exposure to environmental tobacco smoke alone." (pp. 13–14)	1986
"The implications of chronic respiratory symptoms for respiratory health as an adult are unknown and deserve further study." (p. 13)	
Lung cancer: "Involuntary smoking can cause lung cancer in nonsmokers." (p. 13)	1986
Middle ear effusions: "A number of studies report that chronic middle ear effusions are more common in young children whose parents smoke than in children of nonsmoking parents." (p. 14)	1986
Pulmonary function (children): "The children of parents who smoke have small differences in tests of pulmonary function when compared with the children of nonsmokers. Although this decrement is insufficient to cause symptoms, the possibility that it may increase susceptibility to chronic obstructive pulmonary disease with exposure to other agents in adult life, e.g., [sic] active smoking or occupational exposures, needs investigation." (p. 13)	1986
Other:	
"An atmosphere contaminated with tobacco smoke can contribute to the discomfort of many individuals." (p. 7)	1972
"Cigarette smoke can make a significant, measurable contribution to the level of indoor air pollution at levels of smoking and ventilation that are common in the indoor environment." (p. 13)	1984
"Cigarette smoke in the air can produce an increase in both subjective and objective measures of eye irritation." (p. 13)	1984
"Nonsmokers who report exposure to environmental tobacco smoke have higher levels of urinary cotinine, a metabolite of nicotine, than those who do not report such exposure." (p. 13)	1984
"The simple separation of smokers and nonsmokers within the same air space may reduce, but does not eliminate, the exposure of nonsmokers to environmental tobacco smoke." (p. 13)	1986
"Validated questionnaires are needed for the assessment of recent and remote exposure to environmental tobacco smoke in the home, workplace, and other environments." (p. 14)	1986

Sources: U.S. Department of Health, Education, and Welfare 1972; U.S. Department of Health and Human Services 1984, 1986.

patterns of exposure of nonsmokers to tobacco smoke; the epidemiologic evidence on involuntary smoking and disease risks for infants, children, and adults; and policies to control involuntary exposure to tobacco smoke. That report concluded that involuntary smoking caused lung cancer in lifetime nonsmoking adults and was associated with adverse effects on respiratory health in children. The report also stated that simply separating smokers and nonsmokers within the same airspace reduced but did not eliminate exposure to secondhand smoke. All of these findings are relevant to public health and public policy (Table 1.1). The lung cancer conclusion was based on extensive information already available on the carcinogenicity of active smoking, the qualitative similarities between secondhand and mainstream smoke, the uptake of tobacco smoke components by nonsmokers, and the epidemiologic data on involuntary smoking. The three major conclusions of the report (Table 1.2), led Dr. C. Everett Koop, Surgeon General at the time, to comment in his preface that “the right of smokers to smoke ends where their behavior affects the health and well-being of others; furthermore, it is the smokers’ responsibility to ensure that they do not expose nonsmokers to the potential [sic] harmful effects of tobacco smoke” (USDHHS 1986, p. xii).

Two other reports published in 1986 also reached the conclusion that involuntary smoking increased the risk for lung cancer. The International Agency for Research on Cancer (IARC) of the World Health Organization concluded that “passive smoking gives rise to some risk of cancer” (IARC 1986, p. 314). In its monograph on tobacco smoking, the agency supported this conclusion on the basis of the characteristics of sidestream and mainstream smoke, the absorption of tobacco smoke materials during an involuntary exposure, and the nature of dose-response

relationships for carcinogenesis. In the same year, the National Research Council (NRC) also concluded that involuntary smoking increases the incidence of lung cancer in nonsmokers (NRC 1986). In reaching this conclusion, the NRC report cited the biologic plausibility of the association between exposure to secondhand smoke and lung cancer and the supporting epidemiologic evidence. On the basis of a pooled analysis of the epidemiologic data adjusted for bias, the report concluded that the best estimate for the excess risk of lung cancer in nonsmokers married to smokers was 25 percent, compared with nonsmokers married to nonsmokers. With regard to the effects of involuntary smoking on children, the NRC report commented on the literature linking secondhand smoke exposures from parental smoking to increased risks for respiratory symptoms and infections and to a slightly diminished rate of lung growth.

Since 1986, the conclusions with regard to both the carcinogenicity of secondhand smoke and the adverse effects of parental smoking on the health of children have been echoed and expanded (Table 1.3). In 1992, the U.S. Environmental Protection Agency (EPA) published its risk assessment of secondhand smoke as a carcinogen (USEPA 1992). The agency’s evaluation drew on toxicologic information on secondhand smoke and the extensive literature on active smoking. A comprehensive meta-analysis of the 31 epidemiologic studies of secondhand smoke and lung cancer published up to that time was central to the decision to classify secondhand smoke as a group A carcinogen—namely, a known human carcinogen. Estimates of approximately 3,000 U.S. lung cancer deaths per year in nonsmokers were attributed to secondhand smoke. The report also covered other respiratory health effects in children and adults and concluded that involuntary smoking is causally associated with several adverse

Table 1.2 Major conclusions of the 1986 Surgeon General’s report, *The Health Consequences of Involuntary Smoking*

1. Involuntary smoking is a cause of disease, including lung cancer, in healthy nonsmokers.
2. The children of parents who smoke compared with the children of nonsmoking parents have an increased frequency of respiratory infections, increased respiratory symptoms, and slightly smaller rates of increase in lung function as the lung matures.
3. The simple separation of smokers and nonsmokers within the same air space may reduce, but does not eliminate, the exposure of nonsmokers to environmental tobacco smoke.

Source: U.S. Department of Health and Human Services 1986, p. 7.

Table 1.3 Selected major reports, other than those of the U.S. Surgeon General, addressing adverse effects from exposure to tobacco smoke

Agency	Publication	Place and date of publication
National Research Council	<i>Environmental Tobacco Smoke: Measuring Exposures and Assessing Health Effects</i>	Washington, D.C. United States 1986
International Agency for Research on Cancer (IARC)	<i>Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans: Tobacco Smoking</i> (IARC Monograph 38)	Lyon, France 1986
U.S. Environmental Protection Agency (EPA)	<i>Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders</i>	Washington, D.C. United States 1992
National Health and Medical Research Council	<i>The Health Effects of Passive Smoking</i>	Canberra, Australia 1997
California EPA (Cal/EPA), Office of Environmental Health Hazard Assessment	<i>Health Effects of Exposure to Environmental Tobacco Smoke</i>	Sacramento, California United States 1997
Scientific Committee on Tobacco and Health	<i>Report of the Scientific Committee on Tobacco and Health</i>	London, United Kingdom 1998
World Health Organization	<i>International Consultation on Environmental Tobacco Smoke (ETS) and Child Health. Consultation Report</i>	Geneva, Switzerland 1999
IARC	<i>Tobacco Smoke and Involuntary Smoking</i> (IARC Monograph 83)	Lyon, France 2004
Cal/EPA, Office of Environmental Health Hazard Assessment	<i>Proposed Identification of Environmental Tobacco Smoke as a Toxic Air Contaminant</i>	Sacramento, California United States 2005

respiratory effects in children. There was also a quantitative risk assessment for the impact of involuntary smoking on childhood asthma and lower respiratory tract infections in young children.

In the decade since the 1992 EPA report, scientific panels continued to evaluate the mounting evidence linking involuntary smoking to adverse health effects (Table 1.3). The most recent was the 2005 report of the California EPA (Cal/EPA 2005). Over time, research has repeatedly affirmed the conclusions of the 1986 Surgeon General's reports and studies have further identified causal associations of involuntary smoking with diseases and other health disorders. The epidemiologic evidence on involuntary smoking has markedly expanded since 1986, as have the data on exposure to tobacco smoke in the many environments

where people spend time. An understanding of the mechanisms by which involuntary smoking causes disease has also deepened.

As part of the environmental health hazard assessment, Cal/EPA identified specific health effects causally associated with exposure to secondhand smoke. The agency estimated the annual excess deaths in the United States that are attributable to secondhand smoke exposure for specific disorders: sudden infant death syndrome (SIDS), cardiac-related illnesses (ischemic heart disease), and lung cancer (Cal/EPA 2005). For the excess incidence of other health outcomes, either new estimates were provided or estimates from the 1997 health hazard assessment were used without any revisions (Cal/EPA 1997). Overall, Cal/EPA estimated that about 50,000 excess deaths

result annually from exposure to secondhand smoke (Cal/EPA 2005). Estimated annual excess deaths for the total U.S. population are about 3,400 (a range of 3,423 to 8,866) from lung cancer, 46,000 (a range of 22,700 to 69,600) from cardiac-related illnesses, and 430 from SIDS. The agency also estimated that between 24,300 and 71,900 low birth weight or pre-term deliveries, about 202,300 episodes of childhood asthma (new cases and exacerbations), between 150,000 and 300,000 cases of lower respiratory illness in children, and about 789,700 cases of middle ear infections in children occur each year in the United States as a result of exposure to secondhand smoke.

This new 2006 Surgeon General's report returns to the topic of involuntary smoking. The health effects of involuntary smoking have not received comprehensive coverage in this series of reports since 1986. Reports since then have touched on selected aspects of the topic: the 1994 report on tobacco use among young people (USDHHS 1994), the 1998 report on tobacco use among U.S. racial and ethnic minorities (USDHHS 1998), and the 2001 report on women and smoking (USDHHS 2001). As involuntary smoking remains widespread in the United States and elsewhere, the preparation of this report was motivated by the persistence of involuntary smoking as a public health problem and the need to evaluate the substantial new evidence reported since 1986. This report substantially expands the list of topics that were included in the 1986 report. Additional topics include SIDS, developmental effects, and other reproductive effects; heart disease in adults; and cancer sites beyond the lung. For some associations of involuntary smoking with adverse health effects, only a few studies were reviewed in 1986 (e.g., ear disease in children); now, the relevant literature is substantial. Consequently, this report uses meta-analysis to quantitatively summarize evidence as appropriate. Following the approach used in the 2004 report (*The Health Consequences of Smoking*, USDHHS 2004), this 2006 report also systematically evaluates the evidence for causality, judging the extent of the evidence available and then making an inference as to the nature of the association.

Organization of the Report

This twenty-ninth report of the Surgeon General examines the topics of toxicology of secondhand smoke, assessment and prevalence of exposure to secondhand smoke, reproductive and developmental health effects, respiratory effects of exposure to

secondhand smoke in children and adults, cancer among adults, cardiovascular diseases, and the control of secondhand smoke exposure.

This introductory chapter (Chapter 1) includes a discussion of the concept of causation and introduces concepts of causality that are used throughout this report; this chapter also summarizes the major conclusions of the report. Chapter 2 (Toxicology of Secondhand Smoke) sets out a foundation for interpreting the observational evidence that is the focus of most of the following chapters. The discussion details the mechanisms that enable tobacco smoke components to injure the respiratory tract and cause nonmalignant and malignant diseases and other adverse effects. Chapter 3 (Assessment of Exposure to Secondhand Smoke) provides a perspective on key factors that determine exposures of people to secondhand smoke in indoor environments, including building designs and operations, atmospheric markers of secondhand smoke, exposure models, and biomarkers of exposure to secondhand smoke. Chapter 4 (Prevalence of Exposure to Secondhand Smoke) summarizes findings that focus on nicotine measurements in the air and cotinine measurements in biologic materials. The chapter includes exposures in the home, workplace, public places, and special populations. Chapter 5 (Reproductive and Developmental Effects from Exposure to Secondhand Smoke) reviews the health effects on reproduction, on infants, and on child development. Chapter 6 (Respiratory Effects in Children from Exposure to Secondhand Smoke) examines the effects of parental smoking on the respiratory health of children. Chapter 7 (Cancer Among Adults from Exposure to Secondhand Smoke) summarizes the evidence on cancer of the lung, breast, nasal sinuses, and the cervix. Chapter 8 (Cardiovascular Diseases from Exposure to Secondhand Smoke) discusses coronary heart disease (CHD), stroke, and subclinical vascular disease. Chapter 9 (Respiratory Effects in Adults from Exposure to Secondhand Smoke) examines odor and irritation, respiratory symptoms, lung function, and respiratory diseases such as asthma and chronic obstructive pulmonary disease. Chapter 10 (Control of Secondhand Smoke Exposure) considers measures used to control exposure to secondhand smoke in public places, including legislation, education, and approaches based on building designs and operations. The report concludes with "A Vision for the Future." Major conclusions of the report were distilled from the chapter conclusions and appear later in this chapter.

Preparation of the Report

This report of the Surgeon General was prepared by the Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Coordinating Center for Health Promotion, Centers for Disease Control and Prevention (CDC), and U.S. DHHS. Initial chapters were written by 22 experts who were selected because of their knowledge of a particular topic. The contributions of the initial experts were consolidated into 10 major chapters that were then reviewed by more than 40 peer reviewers. The entire manuscript was then sent to more than 30 scientists and experts who reviewed it for its scientific integrity. After each review cycle, the drafts were revised by the scientific editors on the basis of the experts' comments. Subsequently, the report was reviewed by various institutes and agencies

within U.S. DHHS. Publication lags, even short ones, prevent an up-to-the-minute inclusion of all recently published articles and data. Therefore, by the time the public reads this report, there may be additional published studies or data. To provide published information as current as possible, this report includes an Appendix of more recent studies that represent major additions to the literature.

This report is also accompanied by a companion database of key evidence that is accessible through the Internet (<http://www.cdc.gov/tobacco>). The database includes a uniform description of the studies and results on the health effects of exposure to secondhand smoke that were presented in a format compatible with abstraction into standardized tables. Readers of the report may access these data for additional analyses, tables, or figures.

Definitions and Terminology

The inhalation of tobacco smoke by nonsmokers has been variably referred to as "passive smoking" or "involuntary smoking." Smokers, of course, also inhale secondhand smoke. Cigarette smoke contains both particles and gases generated by the combustion at high temperatures of tobacco, paper, and additives. The smoke inhaled by nonsmokers that contaminates indoor spaces and outdoor environments has often been referred to as "secondhand smoke" or "environmental tobacco smoke." This inhaled smoke is the mixture of sidestream smoke released by the smoldering cigarette and the mainstream smoke that is exhaled by a smoker. Sidestream smoke, generated at lower temperatures and under somewhat different combustion conditions than mainstream smoke, tends to have higher concentrations of many of the toxins found in cigarette smoke (USDHHS 1986). However, it is rapidly diluted as it travels away from the burning cigarette.

Secondhand smoke is an inherently dynamic mixture that changes in characteristics and concentration with the time since it was formed and the

distance it has traveled. The smoke particles change in size and composition as gaseous components are volatilized and moisture content changes; gaseous elements of secondhand smoke may be adsorbed onto materials, and particle concentrations drop with both dilution in the air or environment and impaction on surfaces, including the lungs or on the body. Because of its dynamic nature, a specific quantitative definition of secondhand smoke cannot be offered.

This report uses the term secondhand smoke in preference to environmental tobacco smoke, even though the latter may have been used more frequently in previous reports. The descriptor "secondhand" captures the involuntary nature of the exposure, while "environmental" does not. This report also refers to the inhalation of secondhand smoke as involuntary smoking, acknowledging that most nonsmokers do not want to inhale tobacco smoke. The exposure of the fetus to tobacco smoke, whether from active smoking by the mother or from her exposure to secondhand smoke, also constitutes involuntary smoking.

Evidence Evaluation

Following the model of the 1964 report, the Surgeon General's reports on smoking have included comprehensive compilations of the evidence on the health effects of smoking. The evidence is analyzed to identify causal associations between smoking and disease according to enunciated principles, sometimes referred to as the "Surgeon General's criteria" or the "Hill" criteria (after Sir Austin Bradford Hill) for causality (USDHEW 1964; USDHHS 2004). Application of these criteria involves covering all relevant observational and experimental evidence. The criteria, offered in a brief chapter of the 1964 report entitled "Criteria for Judgment," included (1) the consistency of the association, (2) the strength of the association, (3) the specificity of the association, (4) the temporal relationship of the association, and (5) the coherence of the association. Although these criteria have been criticized (e.g., Rothman and Greenland 1998), they have proved useful as a framework for interpreting evidence on smoking and other postulated causes of disease, and for judging whether causality can be inferred.

In the 2004 report of the Surgeon General, *The Health Consequences of Smoking*, the framework for interpreting evidence on smoking and health was revisited in depth for the first time since the 1964 report (USDHHS 2004). The 2004 report provided a four-level hierarchy for interpreting evidence (Table 1.4). The categories acknowledge that evidence can be "suggestive" but not adequate to infer a causal relationship, and also allows for evidence that is "suggestive of no causal relationship." Since the 2004 report, the individual chapter conclusions have consistently used this four-level hierarchy (Table 1.4), but

evidence syntheses and other summary statements may use either the term "increased risk" or "cause" to describe instances in which there is sufficient evidence to conclude that active or involuntary smoking causes a disease or condition. This four-level framework also sharply and completely separates conclusions regarding causality from the implications of such conclusions.

That same framework was used in this report on involuntary smoking and health. The criteria dating back to the 1964 Surgeon General's report remain useful as guidelines for evaluating evidence (USDHEW 1964), but they were not intended to be applied strictly or as a "checklist" that needed to be met before the designation of "causal" could be applied to an association. In fact, for involuntary smoking and health, several of the criteria will not be met for some associations. Specificity, referring to a unique exposure-disease relationship (e.g., the association between thalidomide use during pregnancy and unusual birth defects), can be set aside as not relevant, as all of the health effects considered in this report have causes other than involuntary smoking. Associations are considered more likely to be causal as the strength of an association increases because competing explanations become less plausible alternatives. However, based on knowledge of dosimetry and mechanisms of injury and disease causation, the risk is anticipated to be only slightly or modestly increased for some associations of involuntary smoking with disease, such as lung cancer, particularly when the very strong relative risks found for active smokers are compared with those for lifetime nonsmokers. The finding of only a small elevation in risk, as in the

Table 1.4 Four-level hierarchy for classifying the strength of causal inferences based on available evidence

Level 1	Evidence is sufficient to infer a causal relationship.
Level 2	Evidence is suggestive but not sufficient to infer a causal relationship.
Level 3	Evidence is inadequate to infer the presence or absence of a causal relationship (which encompasses evidence that is sparse, of poor quality, or conflicting).
Level 4	Evidence is suggestive of no causal relationship .

Source: U.S. Department of Health and Human Services 2004.

example of spousal smoking and lung cancer risk in lifetime nonsmokers, does not weigh against a causal association; however, alternative explanations for a risk of a small magnitude need full exploration and cannot be so easily set aside as alternative explanations for a stronger association. Consistency, coherence, and the temporal relationship of involuntary smoking with disease are central to the interpretations in this report. To address coherence, the report draws not only on the evidence for involuntary smoking, but on the even more extensive literature on active smoking and disease.

Although the evidence reviewed in this report comes largely from investigations of secondhand smoke specifically, the larger body of evidence on active smoking is also relevant to many of the associations that were evaluated. The 1986 report found secondhand smoke to be qualitatively similar to mainstream smoke inhaled by the smoker and concluded that secondhand smoke would be expected to have “a toxic and carcinogenic potential that would

not be expected to be qualitatively different from that of MS [mainstream smoke]” (USDHHS 1986, p. 23). The 2004 report of the Surgeon General revisited the health consequences of active smoking (USDHHS 2004), and the conclusions substantially expanded the list of diseases and conditions caused by smoking. Chapters in the present report consider the evidence on active smoking that is relevant to biologic plausibility for causal associations between involuntary smoking and disease. The reviews included in this report cover evidence identified through search strategies set out in each chapter. Of necessity, the evidence on mechanisms was selectively reviewed. However, an attempt was made to cover all health studies through specified target dates. Because of the substantial amount of time involved in preparing this report, lists of new key references published after these cut-off dates are included in an Appendix. Literature reviews were extended when new evidence was sufficient to possibly change the level of a causal conclusion.

Major Conclusions

This report returns to involuntary smoking, the topic of the 1986 Surgeon General’s report. Since then, there have been many advances in the research on secondhand smoke, and substantial evidence has been reported over the ensuing 20 years. This report uses the revised language for causal conclusions that was implemented in the 2004 Surgeon General’s report (USDHHS 2004). Each chapter provides a comprehensive review of the evidence, a quantitative synthesis of the evidence if appropriate, and a rigorous assessment of sources of bias that may affect interpretations of the findings. The reviews in this report reaffirm and strengthen the findings of the 1986 report. With regard to the involuntary exposure of nonsmokers to tobacco smoke, the scientific evidence now supports the following major conclusions:

1. Secondhand smoke causes premature death and disease in children and in adults who do not smoke.
2. Children exposed to secondhand smoke are at an increased risk for sudden infant death syndrome (SIDS), acute respiratory infections, ear problems,

and more severe asthma. Smoking by parents causes respiratory symptoms and slows lung growth in their children.

3. Exposure of adults to secondhand smoke has immediate adverse effects on the cardiovascular system and causes coronary heart disease and lung cancer.
4. The scientific evidence indicates that there is no risk-free level of exposure to secondhand smoke.
5. Many millions of Americans, both children and adults, are still exposed to secondhand smoke in their homes and workplaces despite substantial progress in tobacco control.
6. Eliminating smoking in indoor spaces fully protects nonsmokers from exposure to secondhand smoke. Separating smokers from nonsmokers, cleaning the air, and ventilating buildings cannot eliminate exposures of nonsmokers to secondhand smoke.

Chapter Conclusions

Chapter 2. Toxicology of Secondhand Smoke

Evidence of Carcinogenic Effects from Secondhand Smoke Exposure

1. More than 50 carcinogens have been identified in sidestream and secondhand smoke.
2. The evidence is sufficient to infer a causal relationship between exposure to secondhand smoke and its condensates and tumors in laboratory animals.
3. The evidence is sufficient to infer that exposure of nonsmokers to secondhand smoke causes a significant increase in urinary levels of metabolites of the tobacco-specific lung carcinogen 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK). The presence of these metabolites links exposure to secondhand smoke with an increased risk for lung cancer.
4. The mechanisms by which secondhand smoke causes lung cancer are probably similar to those observed in smokers. The overall risk of secondhand smoke exposure, compared with active smoking, is diminished by a substantially lower carcinogenic dose.

Mechanisms of Respiratory Tract Injury and Disease Caused by Secondhand Smoke Exposure

5. The evidence indicates multiple mechanisms by which secondhand smoke exposure causes injury to the respiratory tract.
6. The evidence indicates mechanisms by which secondhand smoke exposure could increase the risk for sudden infant death syndrome.

Mechanisms of Secondhand Smoke Exposure and Heart Disease

7. The evidence is sufficient to infer that exposure to secondhand smoke has a prothrombotic effect.

8. The evidence is sufficient to infer that exposure to secondhand smoke causes endothelial cell dysfunctions.
9. The evidence is sufficient to infer that exposure to secondhand smoke causes atherosclerosis in animal models.

Chapter 3. Assessment of Exposure to Secondhand Smoke

Building Designs and Operations

1. Current heating, ventilating, and air conditioning systems alone cannot control exposure to secondhand smoke.
2. The operation of a heating, ventilating, and air conditioning system can distribute secondhand smoke throughout a building.

Exposure Models

3. Atmospheric concentration of nicotine is a sensitive and specific indicator for secondhand smoke.
4. Smoking increases indoor particle concentrations.
5. Models can be used to estimate concentrations of secondhand smoke.

Biomarkers of Exposure to Secondhand Smoke

6. Biomarkers suitable for assessing recent exposures to secondhand smoke are available.
7. At this time, cotinine, the primary proximate metabolite of nicotine, remains the biomarker of choice for assessing secondhand smoke exposure.
8. Individual biomarkers of exposure to secondhand smoke represent only one component of a complex mixture, and measurements of one marker may not wholly reflect an exposure to other components of concern as a result of involuntary smoking.

Chapter 4. Prevalence of Exposure to Secondhand Smoke

1. The evidence is sufficient to infer that large numbers of nonsmokers are still exposed to secondhand smoke.
2. Exposure of nonsmokers to secondhand smoke has declined in the United States since the 1986 Surgeon General's report, *The Health Consequences of Involuntary Smoking*.
3. The evidence indicates that the extent of secondhand smoke exposure varies across the country.
4. Homes and workplaces are the predominant locations for exposure to secondhand smoke.
5. Exposure to secondhand smoke tends to be greater for persons with lower incomes.
6. Exposure to secondhand smoke continues in restaurants, bars, casinos, gaming halls, and vehicles.

Chapter 5. Reproductive and Developmental Effects from Exposure to Secondhand Smoke

Fertility

1. The evidence is inadequate to infer the presence or absence of a causal relationship between maternal exposure to secondhand smoke and female fertility or fecundability. No data were found on paternal exposure to secondhand smoke and male fertility or fecundability.

Pregnancy (Spontaneous Abortion and Perinatal Death)

2. The evidence is inadequate to infer the presence or absence of a causal relationship between maternal exposure to secondhand smoke during pregnancy and spontaneous abortion.

Infant Deaths

3. The evidence is inadequate to infer the presence or absence of a causal relationship between exposure to secondhand smoke and neonatal mortality.

Sudden Infant Death Syndrome

4. The evidence is sufficient to infer a causal relationship between exposure to secondhand smoke and sudden infant death syndrome.

Preterm Delivery

5. The evidence is suggestive but not sufficient to infer a causal relationship between maternal exposure to secondhand smoke during pregnancy and preterm delivery.

Low Birth Weight

6. The evidence is sufficient to infer a causal relationship between maternal exposure to secondhand smoke during pregnancy and a small reduction in birth weight.

Congenital Malformations

7. The evidence is inadequate to infer the presence or absence of a causal relationship between exposure to secondhand smoke and congenital malformations.

Cognitive Development

8. The evidence is inadequate to infer the presence or absence of a causal relationship between exposure to secondhand smoke and cognitive functioning among children.

Behavioral Development

9. The evidence is inadequate to infer the presence or absence of a causal relationship between exposure to secondhand smoke and behavioral problems among children.

Height/Growth

10. The evidence is inadequate to infer the presence or absence of a causal relationship between exposure to secondhand smoke and children's height/growth.

Childhood Cancer

11. The evidence is suggestive but not sufficient to infer a causal relationship between prenatal and postnatal exposure to secondhand smoke and childhood cancer.

12. The evidence is inadequate to infer the presence or absence of a causal relationship between maternal exposure to secondhand smoke during pregnancy and childhood cancer.
13. The evidence is inadequate to infer the presence or absence of a causal relationship between exposure to secondhand smoke during infancy and childhood cancer.
14. The evidence is suggestive but not sufficient to infer a causal relationship between prenatal and postnatal exposure to secondhand smoke and childhood leukemias.
15. The evidence is suggestive but not sufficient to infer a causal relationship between prenatal and postnatal exposure to secondhand smoke and childhood lymphomas.
16. The evidence is suggestive but not sufficient to infer a causal relationship between prenatal and postnatal exposure to secondhand smoke and childhood brain tumors.
17. The evidence is inadequate to infer the presence or absence of a causal relationship between prenatal and postnatal exposure to secondhand smoke and other childhood cancer types.

Chapter 6. Respiratory Effects in Children from Exposure to Secondhand Smoke

Lower Respiratory Illnesses in Infancy and Early Childhood

1. The evidence is sufficient to infer a causal relationship between secondhand smoke exposure from parental smoking and lower respiratory illnesses in infants and children.
2. The increased risk for lower respiratory illnesses is greatest from smoking by the mother.

Middle Ear Disease and Adenotonsillectomy

3. The evidence is sufficient to infer a causal relationship between parental smoking and middle ear disease in children, including acute and recurrent otitis media and chronic middle ear effusion.

4. The evidence is suggestive but not sufficient to infer a causal relationship between parental smoking and the natural history of middle ear effusion.
5. The evidence is inadequate to infer the presence or absence of a causal relationship between parental smoking and an increase in the risk of adenoidectomy or tonsillectomy among children.

Respiratory Symptoms and Prevalent Asthma in School-Age Children

6. The evidence is sufficient to infer a causal relationship between parental smoking and cough, phlegm, wheeze, and breathlessness among children of school age.
7. The evidence is sufficient to infer a causal relationship between parental smoking and ever having asthma among children of school age.

Childhood Asthma Onset

8. The evidence is sufficient to infer a causal relationship between secondhand smoke exposure from parental smoking and the onset of wheeze illnesses in early childhood.
9. The evidence is suggestive but not sufficient to infer a causal relationship between secondhand smoke exposure from parental smoking and the onset of childhood asthma.

Atopy

10. The evidence is inadequate to infer the presence or absence of a causal relationship between parental smoking and the risk of immunoglobulin E-mediated allergy in their children.

Lung Growth and Pulmonary Function

11. The evidence is sufficient to infer a causal relationship between maternal smoking during pregnancy and persistent adverse effects on lung function across childhood.
12. The evidence is sufficient to infer a causal relationship between exposure to secondhand smoke after birth and a lower level of lung function during childhood.

Chapter 7. Cancer Among Adults from Exposure to Secondhand Smoke

Lung Cancer

1. The evidence is sufficient to infer a causal relationship between secondhand smoke exposure and lung cancer among lifetime nonsmokers. This conclusion extends to all secondhand smoke exposure, regardless of location.
2. The pooled evidence indicates a 20 to 30 percent increase in the risk of lung cancer from secondhand smoke exposure associated with living with a smoker.

Breast Cancer

3. The evidence is suggestive but not sufficient to infer a causal relationship between secondhand smoke and breast cancer.

Nasal Sinus Cavity and Nasopharyngeal Carcinoma

4. The evidence is suggestive but not sufficient to infer a causal relationship between secondhand smoke exposure and a risk of nasal sinus cancer among nonsmokers.
5. The evidence is inadequate to infer the presence or absence of a causal relationship between secondhand smoke exposure and a risk of nasopharyngeal carcinoma among nonsmokers.

Cervical Cancer

6. The evidence is inadequate to infer the presence or absence of a causal relationship between secondhand smoke exposure and the risk of cervical cancer among lifetime nonsmokers.

Chapter 8. Cardiovascular Diseases from Exposure to Secondhand Smoke

1. The evidence is sufficient to infer a causal relationship between exposure to secondhand smoke and increased risks of coronary heart disease morbidity and mortality among both men and women.
2. Pooled relative risks from meta-analyses indicate a 25 to 30 percent increase in the risk of coronary

heart disease from exposure to secondhand smoke.

3. The evidence is suggestive but not sufficient to infer a causal relationship between exposure to secondhand smoke and an increased risk of stroke.
4. Studies of secondhand smoke and subclinical vascular disease, particularly carotid arterial wall thickening, are suggestive but not sufficient to infer a causal relationship between exposure to secondhand smoke and atherosclerosis.

Chapter 9. Respiratory Effects in Adults from Exposure to Secondhand Smoke

Odor and Irritation

1. The evidence is sufficient to infer a causal relationship between secondhand smoke exposure and odor annoyance.
2. The evidence is sufficient to infer a causal relationship between secondhand smoke exposure and nasal irritation.
3. The evidence is suggestive but not sufficient to conclude that persons with nasal allergies or a history of respiratory illnesses are more susceptible to developing nasal irritation from secondhand smoke exposure.

Respiratory Symptoms

4. The evidence is suggestive but not sufficient to infer a causal relationship between secondhand smoke exposure and acute respiratory symptoms including cough, wheeze, chest tightness, and difficulty breathing among persons with asthma.
5. The evidence is suggestive but not sufficient to infer a causal relationship between secondhand smoke exposure and acute respiratory symptoms including cough, wheeze, chest tightness, and difficulty breathing among healthy persons.
6. The evidence is suggestive but not sufficient to infer a causal relationship between secondhand smoke exposure and chronic respiratory symptoms.

Lung Function

7. The evidence is suggestive but not sufficient to infer a causal relationship between short-term secondhand smoke exposure and an acute decline in lung function in persons with asthma.
8. The evidence is inadequate to infer the presence or absence of a causal relationship between short-term secondhand smoke exposure and an acute decline in lung function in healthy persons.
9. The evidence is suggestive but not sufficient to infer a causal relationship between chronic secondhand smoke exposure and a small decrement in lung function in the general population.
10. The evidence is inadequate to infer the presence or absence of a causal relationship between chronic secondhand smoke exposure and an accelerated decline in lung function.

Asthma

11. The evidence is suggestive but not sufficient to infer a causal relationship between secondhand smoke exposure and adult-onset asthma.
12. The evidence is suggestive but not sufficient to infer a causal relationship between secondhand smoke exposure and a worsening of asthma control.

Chronic Obstructive Pulmonary Disease

13. The evidence is suggestive but not sufficient to infer a causal relationship between secondhand smoke exposure and risk for chronic obstructive pulmonary disease.
14. The evidence is inadequate to infer the presence or absence of a causal relationship between secondhand smoke exposure and morbidity in persons with chronic obstructive pulmonary disease.

Chapter 10. Control of Secondhand Smoke Exposure

1. Workplace smoking restrictions are effective in reducing secondhand smoke exposure.
2. Workplace smoking restrictions lead to less smoking among covered workers.
3. Establishing smoke-free workplaces is the only effective way to ensure that secondhand smoke exposure does not occur in the workplace.
4. The majority of workers in the United States are now covered by smoke-free policies.
5. The extent to which workplaces are covered by smoke-free policies varies among worker groups, across states, and by sociodemographic factors. Workplaces related to the entertainment and hospitality industries have notably high potential for secondhand smoke exposure.
6. Evidence from peer-reviewed studies shows that smoke-free policies and regulations do not have an adverse economic impact on the hospitality industry.
7. Evidence suggests that exposure to secondhand smoke varies by ethnicity and gender.
8. In the United States, the home is now becoming the predominant location for exposure of children and adults to secondhand smoke.
9. Total bans on indoor smoking in hospitals, restaurants, bars, and offices substantially reduce secondhand smoke exposure, up to several orders of magnitude with incomplete compliance, and with full compliance, exposures are eliminated.
10. Exposures of nonsmokers to secondhand smoke cannot be controlled by air cleaning or mechanical air exchange.

Methodologic Issues

Much of the evidence on the health effects of involuntary smoking comes from observational epidemiologic studies that were carried out to test hypotheses related to secondhand smoke and risk for diseases and other adverse health effects. The challenges faced in carrying out these studies reflect those of observational research generally: assessment of the relevant exposures and outcomes with sufficient validity and precision, selection of an appropriate study design, identification of an appropriate and sufficiently large study population, and collection of information on other relevant factors that may confound or modify the association being studied. The challenge of accurately classifying secondhand smoke exposures confronts all studies of such exposures, and consequently the literature on approaches to and limitations of exposure classification is substantial. Sources of bias that can affect the findings of epidemiologic studies have been widely discussed (Rothman and Greenland 1998), both in general and in relation to studies of involuntary smoking. Concerns about bias apply to any study of an environmental agent and disease risk: misclassification of exposures or outcomes, confounding effect modification, and proper selection of study participants. In addition, the generalizability of findings from one population to another (external validity) further determines the value of evidence from a study. Another methodologic concern affecting secondhand smoke literature comes from the use of meta-analysis to combine the findings of epidemiologic studies; general concerns related to the use of meta-analysis for observational data and more specific concerns related to involuntary smoking have also been raised. This chapter considers these methodologic issues in anticipation of more specific treatment in the following chapters.

Classification of Secondhand Smoke Exposure

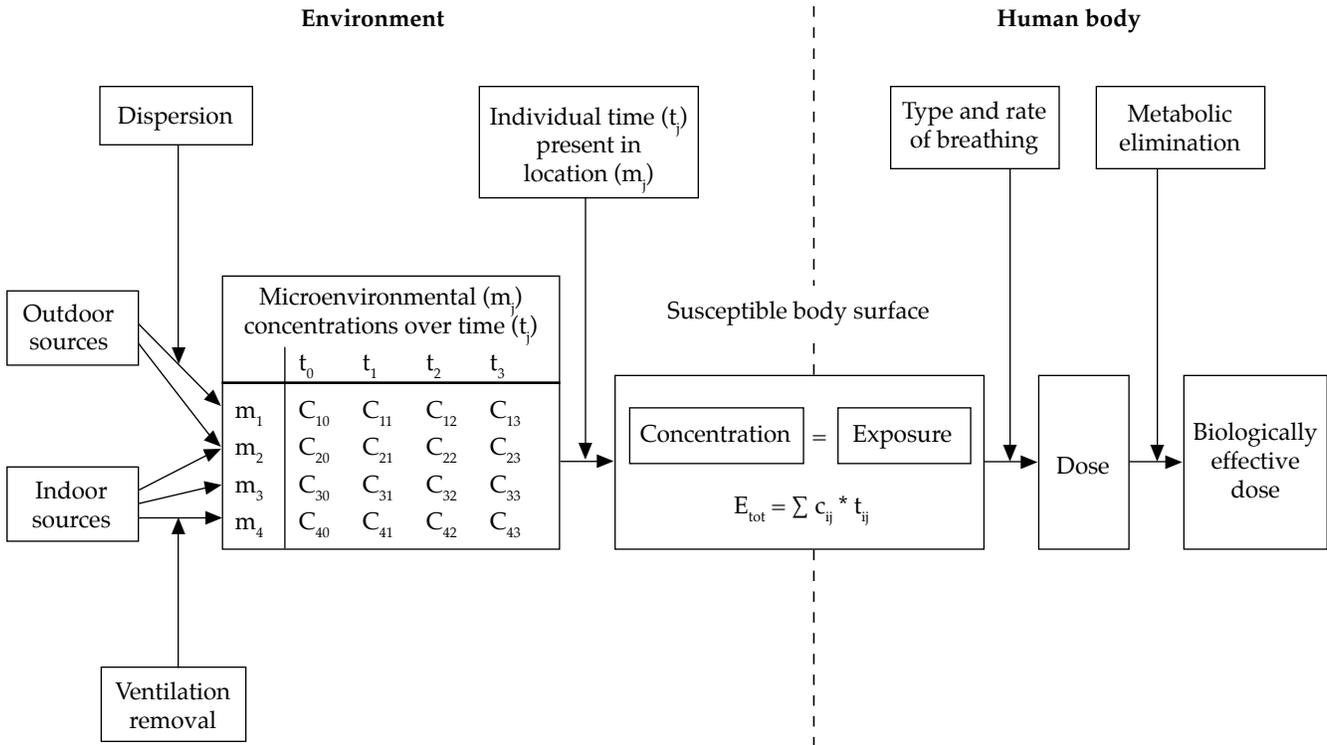
For secondhand smoke, as for any environmental factor that may be a cause of disease, the exposure assessment might encompass the time and place of the exposure, cumulative exposures, exposure during a particular time, or a recent exposure (Jaakkola and Jaakkola 1997; Jaakkola and Samet 1999). For example, exposures to secondhand smoke across the full life

span may be of interest for lung cancer, while only more recent exposures may be relevant to the exacerbation of asthma. For CHD, both temporally remote and current exposures may affect risk. Assessments of exposures are further complicated by the multiplicity of environments where exposures take place and the difficulty of characterizing the exposure in some locations, such as public places or workplaces. Additionally, exposures probably vary qualitatively and quantitatively over time and across locations because of temporal changes and geographic differences in smoking patterns.

Nonetheless, researchers have used a variety of approaches for exposure assessments in epidemiologic studies of adverse health effects from involuntary smoking. Several core concepts that are fundamental to these approaches are illustrated in Figure 1.1 (Samet and Jaakkola 1999). Cigarette smoking is, of course, the source of most secondhand smoke in the United States, followed by pipes, cigars, and other products. Epidemiologic studies generally focus on assessing the exposure, which is the contact with secondhand smoke. The concentrations of secondhand smoke components in a space depend on the number of smokers and the rate at which they are smoking, the volume into which the smoke is distributed, the rate at which the air in the space exchanges with uncontaminated air, and the rate at which the secondhand smoke is removed from the air. Concentration, exposure, and dose differ in their definitions, although the terms are sometimes used without sharp distinctions. However, surrogate indicators that generally describe a source of exposure may also be used to assess the exposure, such as marriage to a smoker or the number of cigarettes smoked in the home. Biomarkers can provide an indication of an exposure or possibly the dose, but for secondhand smoke they are used for recent exposure only.

People are exposed to secondhand smoke in a number of different places, often referred to as “microenvironments” (NRC 1991). A microenvironment is a definable location that has a constant concentration of the contaminant of interest, such as secondhand smoke, during the time that a person is there. Some key microenvironments for secondhand smoke include the home, the workplace, public places, and transportation environments (Klepeis 1999). Based

Figure 1.1 The determinants of exposure, dose, and biologically effective dose that underlie the development of health effects from smoking



Source: Samet and Jaakkola 1999. Reprinted with permission.

on the microenvironmental model, total exposure can be estimated as the weighted average of the concentrations of secondhand smoke or indicator compounds, such as nicotine, in the microenvironments where time is spent; the weights are the time spent in each microenvironment. Klepeis (1999) illustrates the application of the microenvironmental model with national data from the National Human Activity Pattern Survey conducted by the EPA. His calculations yield an overall estimate of exposure to airborne particles from smoking and of the contributions to this exposure from various microenvironments.

Much of the epidemiologic evidence addresses the consequences of an exposure in a particular microenvironment, such as the home (spousal smoking and lung cancer risk or maternal smoking and risk for asthma exacerbation), or the workplace (exacerbation of asthma by the presence of smokers). Some studies have attempted to cover multiple microenvironments

and to characterize exposures over time. For example, in the multicenter study of secondhand smoke exposure and lung cancer carried out in the United States, Fontham and colleagues (1994) assessed exposures during childhood, in workplaces, and at home during adulthood. Questionnaires that assess exposures have been the primary tool used in epidemiologic studies of secondhand smoke and disease. Measurement of biomarkers has been added in some studies, either as an additional and complementary exposure assessment approach or for validating questionnaire responses. Some studies have also measured components of secondhand smoke in the air.

Questionnaires generally address sources of exposure in microenvironments and can be tailored to address the time period of interest. Questionnaires represent the only approach that can be used to assess exposures retrospectively over a life span, because available biomarkers only reflect exposures

over recent days or, at most, weeks. Questionnaires on secondhand smoke exposure have been assessed for their reliability and validity, generally based on comparisons with either biomarker or air monitoring data as the “gold” standard (Jaakkola and Jaakkola 1997). Two studies evaluated the reliability of questionnaires on lifetime exposures (Pron et al. 1988; Coultas et al. 1989). Both showed a high degree of repeatability for questions concerning whether a spouse had smoked, but a lower reliability for responses concerning the quantitative aspects of an exposure. Emerson and colleagues (1995) evaluated the repeatability of information from parents of children with asthma. They found a high reliability for parent-reported tobacco use and for the number of cigarettes to which the child was exposed in the home during the past week.

To assess validity, questionnaire reports of current or recent exposures have been compared with levels of cotinine and other biomarkers. These studies tend to show a moderate correlation between levels of cotinine and questionnaire indicators of exposures (Kawachi and Colditz 1996; Cal/EPA 1997; Jaakkola and Jaakkola 1997). However, cotinine levels reflect not only exposure but metabolism and excretion (Benowitz 1999). Consequently, exposure is only one determinant of variation in cotinine levels among persons; there also are individual variations in metabolism and excretion rates. In spite of these sources of variability, mean levels of cotinine vary as anticipated across categories of self-reported exposures (Cal/EPA 1997; Jaakkola and Jaakkola 1997), and self-reported exposures are moderately associated with measured levels of markers (Cal/EPA 1997; Jaakkola and Jaakkola 1997).

Biomarkers are also used for assessing exposures to secondhand smoke. A number of biomarkers are available, but they vary in their specificity and in the dynamics of the temporal relationship between the exposure and the marker level (Cal/EPA 1997; Benowitz 1999). These markers include specific tobacco smoke components (nicotine) or metabolites (cotinine and tobacco-specific nitrosamines), nonspecific biomarkers (thiocyanate and CO), adducts with tobacco smoke components or metabolites (4-aminobiphenyl-hemoglobin adducts, benzo[*a*]pyrene-DNA adducts, and polycyclic aromatic hydrocarbon-albumin adducts), and nonspecific assays (urinary mutagenicity). Cotinine has been the most widely used biomarker, primarily because of its specificity, half-life, and ease of measurement in body fluids (e.g., urine, blood, and saliva). Biomarkers are discussed

in detail in Chapter 3 (Assessment of Exposure to Secondhand Smoke).

Some epidemiologic studies have also incorporated air monitoring, either direct personal sampling or the indirect approach based on the microenvironmental model. Nicotine, present in the gas phase of secondhand smoke, can be monitored passively with a special filter or actively using a pump and a sorbent. Hammond and Leaderer (1987) first described a diffusion monitor for the passive sampling of nicotine in 1987; this device has now been widely used to assess concentrations in different environments and to study health effects. Airborne particles have also been measured using active monitoring devices.

Each of these approaches for assessing exposures has strengths and limitations, and preference for one over another will depend on the research question and its context (Jaakkola and Jaakkola 1997; Jaakkola and Samet 1999). Questionnaires can be used to characterize sources of exposures, such as smoking by parents. With air concentrations of markers and time-activity information, estimates of secondhand smoke exposures can be made with the microenvironmental model. Biomarkers provide exposure measures that reflect the patterns of exposure and the kinetics of the marker; the cotinine level in body fluids, for example, reflects an exposure during several days. Air monitoring may be useful for validating measurements of exposure. Exposure assessment strategies are matched to the research question and often employ a mixture of approaches determined by feasibility and cost constraints.

Misclassification of Secondhand Smoke Exposure

Misclassification may occur when classifying exposures, outcomes, confounding factors, or modifying factors. Misclassification may be differential on either exposure or outcome, or it may be random (Armstrong et al. 1992). Differential or nonrandom misclassification may either increase or decrease estimates of effect, while random misclassification tends to reduce the apparent effect and weaken the relationship of exposure with disease risk. In studies of secondhand smoke and disease risk, exposure misclassification has been a major consideration in the interpretation of the evidence, although misclassification of health outcome measures has not been a substantial issue in this research. The consequences for epidemiologic studies of misclassification in general are well established (Rothman and Greenland 1998).

An extensive body of literature on the classification of exposures to secondhand smoke is reviewed in this and other chapters, as well as in some publications on the consequences of misclassification (Wu 1999). Two general patterns of exposure misclassification are of concern to secondhand smoke: (1) random misclassification that is not differential by the presence or absence of the health outcome and (2) systematic misclassification that is differential by the health outcome. In studying the health effects of secondhand smoke in adults, there is a further concern as to the classification of the active smoking status (never, current, or former smoking); in studies of children, the accuracy of secondhand smoke exposure classification is the primary methodologic issue around exposure assessment, but unreported active smoking by adolescents is also a concern.

With regard to random misclassification of secondhand smoke exposures, there is an inherent degree of unavoidable measurement error in the exposure measures used in epidemiologic studies. Questionnaires generally assess contact with sources of an exposure (e.g., smoking in the home or workplace) and cannot capture all exposures nor the intensity of exposures; biomarkers provide an exposure index for a particular time window and have intrinsic variability. Some building-related factors that determine an exposure cannot be assessed accurately by a questionnaire, such as the rate of air exchange and the size of the microenvironment where time is spent, nor can concentrations be assessed accurately by subjective reports of the perceived level of tobacco smoke. In general, random misclassification of exposures tends to reduce the likelihood that studies of secondhand smoke exposure will find an effect. This type of misclassification lessens the contrast between exposure groups, because some truly exposed persons are placed in the unexposed group and some truly unexposed persons are placed in the exposed group. Differential misclassification, also a concern, may increase or decrease associations, depending on the pattern of misreporting.

One particular form of misclassification has been raised with regard to secondhand smoke exposure and lung cancer: the classification of some current or former smokers as lifetime nonsmokers (USEPA 1992; Lee and Forey 1995; Hackshaw et al. 1997; Wu 1999). The resulting bias would tend to increase the apparent association of secondhand smoke with lung cancer, if the misclassified active smokers are also more likely to be classified as involuntary smokers. Most studies of lung cancer and secondhand smoke have used spousal smoking as a main exposure variable. As

smoking tends to aggregate between spouses (smokers are more likely to marry smokers), misclassification of active smoking would tend to be differential on the basis of spousal smoking (the exposure under investigation). Because active smoking is strongly associated with increased disease risk, greater misclassification of an actively smoking spouse as a nonsmoker among spouses of smokers compared with spouses of nonsmokers would lead to risk estimates for spousal smoking that are biased upward by the effect of active smoking. This type of misclassification is also relevant to studies of spousal exposure and CHD risk or other diseases also caused by active smoking, although the potential for bias is less because the association of active smoking with CHD is not as strong as with lung cancer.

There have been a number of publications on this form of misclassification. Wu (1999) provides a review, and Lee and colleagues (2001) offer an assessment of potential consequences. A number of models have been developed to assess the extent of bias resulting from the misclassification of active smokers as lifetime nonsmokers (USEPA 1992; Hackshaw et al. 1997). These models incorporate estimates of the rate of misclassification, the degree of aggregation of smokers by marriage, the prevalence of smoking in the population, and the risk of lung cancer in misclassified smokers (Wu 1999). Although debate about this issue continues, analyses show that estimates of upward bias from misclassifying active smokers as lifetime nonsmokers cannot fully explain the observed increase in risk for lung cancer among lifetime nonsmokers married to smokers (Hackshaw et al. 1997; Wu 1999).

There is one additional issue related to exposure misclassification. During the time the epidemiologic studies of secondhand smoke have been carried out, exposure has been widespread and almost unavoidable. Therefore, the risk estimates may be biased downward because there are no truly unexposed persons. The 1986 Surgeon General's report recognized this methodologic issue and noted the need for further data on population exposures to secondhand smoke (USDHHS 1986). This bias was also recognized in the 1986 report of the NRC, and an adjustment for this misclassification was made to the lung cancer estimate (NRC 1986). Similarly, the 1992 report of the EPA commented on background exposure and made an adjustment (USEPA 1992). Some later studies have attempted to address this issue; for example, in a case-control study of active and involuntary smoking and breast cancer in Switzerland, Morabia and colleagues (2000) used a questionnaire to assess exposure and

identified a small group of lifetime nonsmokers who also reported no exposure to secondhand smoke. With this subgroup of controls as the reference population, the risks of secondhand smoke exposure were substantially greater for active smoking than when the full control population was used.

This Surgeon General's report further addresses specific issues of exposure misclassification when they are relevant to the health outcome under consideration.

Use of Meta-Analysis

Meta-analysis refers to the process of evaluating and combining a body of research literature that addresses a common question. Meta-analysis is composed of qualitative and quantitative components. The qualitative component involves the systematic identification of all relevant investigations, a systematic assessment of their characteristics and quality, and the decision to include or exclude studies based on predetermined criteria. Consideration can be directed toward sources of bias that might affect the findings. The quantitative component involves the calculation and display of study results on common scales and, if appropriate, the statistical combination of these results across studies and an exploration of the reasons for any heterogeneity of findings. Viewing the findings of all studies as a single plot provides insights into the consistency of results and the precision of the studies considered. Most meta-analyses are based on published summary results, although they are most powerful when applied to data at the level of individual participants. Meta-analysis is most widely used to synthesize evidence from randomized clinical trials, sometimes yielding findings that were not evident from the results of individual studies. Meta-analysis also has been used extensively to examine bodies of observational evidence.

Beginning with the 1986 NRC report, meta-analysis has been used to summarize the evidence on involuntary smoking and health. Meta-analysis was central to the 1992 EPA risk assessment of secondhand smoke, and a series of meta-analyses supported the conclusions of the 1998 report of the Scientific Committee on Tobacco and Health in the United Kingdom. The central role of meta-analysis in interpreting and applying the evidence related to involuntary smoking and disease has led to focused criticisms of the use of meta-analysis in this context. Several papers that acknowledged support from the tobacco industry have addressed the epidemiologic findings for lung cancer, including the selection and quality of the

studies, the methods for meta-analysis, and dose-response associations (Fleiss and Gross 1991; Tweedie and Mengersen 1995; Lee 1998, 1999). In a lawsuit brought by the tobacco industry against the EPA, the 1998 decision handed down by Judge William L. Osteen, Sr., in the North Carolina Federal District Court criticized the approach EPA had used to select studies for its meta-analysis and criticized the use of 90 percent rather than 95 percent confidence intervals for the summary estimates (*Flue-Cured Tobacco Cooperative Stabilization Corp. v. United States Environmental Protection Agency*, 857 F. Supp. 1137 [M.D.N.C. 1993]). In December 2002, the 4th U.S. Circuit Court of Appeals threw out the lawsuit on the basis that tobacco companies cannot sue the EPA over its secondhand smoke report because the report was not a final agency action and therefore not subject to court review (*Flue-Cured Tobacco Cooperative Stabilization Corp. v. The United States Environmental Protection Agency*, No. 98-2407 [4th Cir., December 11, 2002], cited in 17.7 TPLR 2.472 [2003]).

Recognizing that there is still an active discussion around the use of meta-analysis to pool data from observational studies (versus clinical trials), the authors of this Surgeon General's report used this methodology to summarize the available data when deemed appropriate and useful, even while recognizing that the uncertainty around the meta-analytic estimates may exceed the uncertainty indicated by conventional statistical indices, because of biases either within the observational studies or produced by the manner of their selection. However, a decision to not combine estimates might have produced conclusions that are far more uncertain than the data warrant because the review would have focused on individual study results without considering their overall pattern, and without allowing for a full accounting of different sample sizes and effect estimates.

The possibility of publication bias has been raised as a potential limitation to the interpretation of evidence on involuntary smoking and disease in general, and on lung cancer and secondhand smoke exposure specifically. A 1988 paper by Vandembroucke used a descriptive approach, called a "funnel plot," to assess the possibility that publication bias affected the 13 studies considered in a review by Wald and colleagues (1986). This type of plot characterizes the relationship between the magnitude of estimates and their precision. Vandembroucke suggested the possibility of publication bias only in reference to the studies of men. Bero and colleagues (1994) concluded that there

had not been a publication bias against studies with statistically significant findings, nor against the publication of studies with nonsignificant or mixed findings in the research literature. The researchers were able to identify only five unpublished “negative” studies, of which two were dissertations that tend to be delayed in publication. A subsequent study by Misakian and Bero (1998) did find a delay in the publication of studies with nonsignificant results in comparison with studies having significant results; whether this pattern has varied over the several decades of research on secondhand smoke was not addressed. More recently, Copas and Shi (2000) assessed the 37 studies considered in the meta-analysis by Hackshaw and colleagues (1997) for publication bias. Copas and Shi (2000) found a significant correlation between the estimated risk of exposure and sample size, such that smaller studies tended to have higher values. This pattern suggests the possibility of publication bias. However, using a funnel plot of the same studies, Lubin (1999) found little evidence for publication bias.

On this issue of publication bias, it is critical to distinguish between indirect statistical arguments and arguments based on actual identification of previously unidentified research. The strongest case against substantive publication bias has been made by researchers who mounted intensive efforts to find the possibly missing studies; these efforts have yielded little—nothing that would alter published conclusions (Bero et al. 1994; Glantz 2000). Presumably because this exposure is a great public health concern, the findings of studies that do not have statistically significant outcomes continue to be published (Kawachi and Colditz 1996).

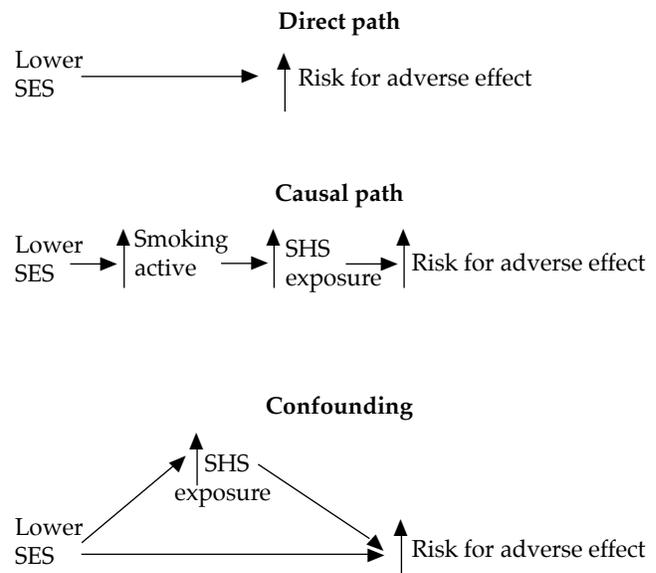
The quantitative results of the meta-analyses, however, were not determinate in making causal inferences in this Surgeon General's report. In particular, the level of statistical significance of estimates from the meta-analyses was not a predominant factor in making a causal conclusion. For that purpose, this report relied on the approach and criteria set out in the 1964 and 2004 reports of the Surgeon General, which involved judgments based on an array of quantitative and qualitative considerations that included the degree of heterogeneity in the designs of the studies that were examined. Sometimes this heterogeneity limits the inference from meta-analysis by weakening the rationale for pooling the study results. However, the availability of consistent evidence from heterogenous designs can strengthen the meta-analytic findings by making it unlikely that a common bias could persist across different study designs and populations.

Confounding

Confounding, which refers in this context to the mixing of the effect of another factor with that of secondhand smoke, has been proposed as an explanation for associations of secondhand smoke with adverse health consequences. Confounding occurs when the factor of interest (secondhand smoke) is associated in the data under consideration with another factor (the confounder) that, by itself, increases the risk for the disease (Rothman and Greenland 1998). Correlates of secondhand smoke exposures are not confounding factors unless an exposure to them increases the risk of disease. A factor proposed as a potential confounder is not necessarily an actual confounder unless it fulfills the two elements of the definition. Although lengthy lists of potential confounding factors have been offered as alternatives to direct associations of secondhand smoke exposures with the risk for disease, the factors on these lists generally have not been shown to be confounding in the particular data of interest.

The term confounding also conveys an implicit conceptualization as to the causal pathways that link secondhand smoke and the confounding factor to

Figure 1.2 Model for socioeconomic status (SES) and secondhand smoke (SHS) exposure



Arrows indicate directionality of association.

disease risk. Confounding implies that the confounding factor has an effect on risk that is independent of secondhand smoke exposure. Some factors considered as potential confounders may, however, be in the same causal pathway as a secondhand smoke exposure. Although socioeconomic status (SES) is often cited as a potential confounding factor, it may not have an independent effect but can affect disease risk through its association with secondhand smoke exposure (Figure 1.2). This figure shows general alternative relationships among SES, secondhand smoke exposure, and risk for an adverse effect. SES may have a direct effect, or it may indirectly exert its effect through an association with secondhand smoke exposure, or it may confound the relationship between secondhand smoke exposure and disease risk. To control for SES as a potential confounding factor without considering underlying relationships may lead to incorrect risk estimates. For example, controlling for SES would not be appropriate if it is a determinant of secondhand smoke exposure but has no direct effect.

Nonetheless, because the health effects of involuntary smoking have other causes, the possibility of confounding needs careful exploration when assessing associations of secondhand smoke exposure with adverse health effects. In addition, survey data from

the last several decades show that secondhand smoke exposure is associated with correlates of lifestyle that may influence the risk for some health effects, thus increasing concerns for the possibility of confounding (Kawachi and Colditz 1996). Survey data from the United States (Matanoski et al. 1995) and the United Kingdom (Thornton et al. 1994) show that adults with secondhand smoke exposures generally tend to have less healthful lifestyles. However, the extent to which these patterns of association can be generalized, either to other countries or to the past, is uncertain.

The potential bias from confounding varies with the association of the confounder to secondhand smoke exposures in a particular study and to the strength of the confounder as a risk factor. The importance of confounding to the interpretation of evidence depends further on the magnitude of the effect of secondhand smoke on disease. As the strength of an association lessens, confounding as an alternative explanation for an association becomes an increasing concern. In prior reviews, confounding has been addressed either quantitatively (Hackshaw et al. 1997) or qualitatively (Cal/EPA 1997; Thun et al. 1999). In the chapters in this report that focus on specific diseases, confounding is specifically addressed in the context of potential confounding factors for the particular diseases.

Tobacco Industry Activities

The evidence on secondhand smoke and disease risk, given the public health and public policy implications, has been reviewed extensively in the published peer-reviewed literature and in evaluations by a number of expert panels. In addition, the evidence has been criticized repeatedly by the tobacco industry and its consultants in venues that have included the peer-reviewed literature, public meetings and hearings, and scientific symposia that included symposia sponsored by the industry. Open criticism in the peer-reviewed literature can strengthen the credibility of scientific evidence by challenging researchers to consider the arguments proposed by critics and to rebut them.

Industry documents indicate that the tobacco industry has engaged in widespread activities, however, that have gone beyond the bounds of accepted scientific practice (Glantz 1996; Ong and Glantz 2000, 2001; Rampton and Stauber 2000; Yach and Bialous

2001; Hong and Bero 2002; Diethelm et al. 2004). Through a variety of organized tactics, the industry has attempted to undermine the credibility of the scientific evidence on secondhand smoke. The industry has funded or carried out research that has been judged to be biased, supported scientists to generate letters to editors that criticized research publications, attempted to undermine the findings of key studies, assisted in establishing a scientific society with a journal, and attempted to sustain controversy even as the scientific community reached consensus (Garne et al. 2005). These tactics are not a topic of this report, but to the extent that the scientific literature has been distorted, they are addressed as the evidence is reviewed. This report does not specifically identify tobacco industry sponsorship of publications unless that information is relevant to the interpretation of the findings and conclusions.

A Vision for the Future

This country has experienced a substantial reduction of involuntary exposure to secondhand tobacco smoke in recent decades. Significant reductions in the rate of smoking among adults began even earlier. Consequently, about 80 percent of adults are now nonsmokers, and many adults and children can live their daily lives without being exposed to secondhand smoke. Nevertheless, involuntary exposure to secondhand smoke remains a serious public health hazard.

This report documents the mounting and now substantial evidence characterizing the health risks caused by exposure to secondhand smoke. Multiple major reviews of the evidence have concluded that secondhand smoke is a known human carcinogen, and that exposure to secondhand smoke causes adverse effects, particularly on the cardiovascular system and the respiratory tract and on the health of those exposed, children as well as adults. Unfortunately, reductions in exposure have been slower among young children than among adults during the last decade, as expanding workplace restrictions now protect the majority of adults while homes remain the most important source of exposure for children.

Clearly, the social norms regarding secondhand smoke have changed dramatically, leading to widespread support over the past 30 years for a society free of involuntary exposures to tobacco smoke. In the first half of the twentieth century smoking was permitted in almost all public places, including elevators and all types of public transportation. At the time of the 1964 Surgeon General's report on smoking and health (U.S. Department of Health, Education, and Welfare [USDHEW] 1964), many physicians were still smokers, and the tables in U.S. Public Health Service (PHS) meeting rooms had PHS ashtrays on them. A thick, smoky haze was an accepted part of presentations at large meetings, even at medical conferences and in the hospital environment.

As the adverse health consequences of active smoking became more widely documented in the 1960s, many people began to question whether exposure of nonsmokers to secondhand smoke also posed a serious health risk. This topic was first addressed in this series of reports by Surgeon General Jesse Steinfeld in the 1972 report to Congress (USDHEW 1972). During the 1970s, policy changes to provide smoke-free environments received more widespread

consideration. As the public policy debate grew and expanded in the 1980s, the scientific evidence on the risk of adverse effects from exposure to secondhand smoke was presented in a comprehensive context for the first time by Surgeon General C. Everett Koop in the 1986 report, *The Health Consequences of Involuntary Smoking* (U.S. Department of Health and Human Services [USDHHS] 1986).

The ever-increasing momentum for smoke-free indoor environments has been driven by scientific evidence on the health risks of involuntary exposure to secondhand smoke. This new Surgeon General's report is based on a far larger body of evidence than was available in 1986. The evidence reviewed in this report confirms the findings of the 1986 report and adds new causal conclusions. The growing body of data increases support for the conclusion that exposure to secondhand smoke causes lung cancer in lifetime nonsmokers. In addition to epidemiologic data, this report presents converging evidence that the mechanisms by which secondhand smoke causes lung cancer are similar to those that cause lung cancer in active smokers. In the context of the risks from active smoking, the lung cancer risk that secondhand smoke exposure poses to nonsmokers is consistent with an extension to involuntary smokers of the dose-response relationship for active smokers.

Cardiovascular effects of even short exposures to secondhand smoke are readily measurable, and the risks for cardiovascular disease from involuntary smoking appear to be about 50 percent less than the risks for active smokers. Although the risks from secondhand smoke exposures are larger than anticipated, research on the mechanisms by which tobacco smoke exposure affects the cardiovascular system supports the plausibility of the findings of epidemiologic studies (the 1986 report did not address cardiovascular disease). This 2006 report also reviews the evidence on the multiple mechanisms by which secondhand smoke injures the respiratory tract and causes sudden infant death syndrome.

Since 1986, the attitude of the public toward and the social norms around secondhand smoke exposure have changed dramatically to reflect a growing viewpoint that the involuntary exposure of nonsmokers to secondhand smoke is unacceptable. As a result, increasingly strict public policies to control involuntary exposure to secondhand smoke have been put in

place. The need for restrictions on smoking in enclosed public places is now widely accepted in the United States. A growing number of communities, counties, and states are requiring smoke-free environments for nearly all enclosed public places, including all private worksites, restaurants, bars, and casinos.

As knowledge about the health risks of secondhand smoke exposure grows, investigators continue to identify additional scientific questions.

- Because active smoking is firmly established as a causal factor of cancer for a large number of sites, and because many scientists assert that there may be no threshold for carcinogenesis from tobacco smoke exposure, researchers hypothesize that people who are exposed to secondhand smoke are likely to be at some risk for the same types of cancers that have been established as smoking-related among active smokers.
- The potential risks for stroke and subclinical vascular disease from secondhand smoke exposure require additional research.
- There is a need for additional research on the etiologic relationship between secondhand smoke exposure and several respiratory health outcomes in adults, including respiratory symptoms, declines in lung function, and adult-onset asthma.
- There is also a need for research to further evaluate the adverse reproductive outcomes and childhood respiratory effects from both prenatal and postnatal exposure to secondhand smoke.
- Further research and improved methodologies are also needed to advance an understanding of the potential effects on cognitive, behavioral, and physical development that might be related to early exposures to secondhand smoke.

As these and other research questions are addressed, the scientific literature documenting the adverse health effects of exposure to secondhand smoke will expand. Over the past 40 years since the release of the landmark 1964 report of the Surgeon General's Advisory Committee on Smoking and Health (USDHEW 1964), researchers have compiled an ever-growing list of adverse health effects caused by exposure to tobacco smoke, with evidence that active smoking causes damage to virtually every organ of

the body (USDHHS 2004). Similarly, since the 1986 report (USDHHS 1986), the number of adverse health effects caused by exposure to secondhand smoke has also expanded. Following the format of the electronic database released with the 2004 report, the research findings supporting the conclusions in this report will be accessible in a database that can be found at <http://www.cdc.gov/tobacco>. With an this expanding base of scientific knowledge, the list of adverse health effects caused by exposure to secondhand smoke will likely increase.

Biomarker data from the 2005 *Third National Report on Human Exposure to Environmental Chemicals* document great progress since the 1986 report in reducing the involuntary exposure of nonsmokers to secondhand smoke (CDC 2005). Between the late 1980s and 2002, the median cotinine level (a metabolite of nicotine) among nonsmokers declined by more than 70 percent. Nevertheless, many challenges remain to maintain the momentum toward universal smoke-free environments. First, there is a need to continue and even improve the surveillance of sources and levels of exposure to secondhand smoke. The data from the 2005 exposure report show that median cotinine levels among children are more than twice those of nonsmoking adults, and non-Hispanic Blacks have levels more than twice those of Mexican Americans and non-Hispanic Whites (CDC 2005). The multiple factors related to these disparities in median cotinine levels among nonsmokers need to be identified and addressed. Second, the data from the 2005 exposure report suggest that the scientific community should sustain the current momentum to reduce exposures of nonsmokers to secondhand smoke (CDC 2005). Research reviewed in this report indicates that policies creating completely smoke-free environments are the most economical and efficient approaches to providing this protection. Additionally, neither central heating, ventilating, and air conditioning systems nor separately ventilated rooms control exposures to secondhand smoke. Unfortunately, data from the 2005 exposure report also emphasized that young children remain an exposed population (CDC 2005). However, more evidence is needed on the most effective strategies to promote voluntary changes in smoking norms and practices in homes and private automobiles. Finally, data on the health consequences of secondhand smoke exposures emphasize the importance of the role of health care professionals in this issue. They must assume a greater, more active involvement in reducing exposures, particularly for susceptible groups.

The findings and recommendations of this report can be extended to other countries and are supportive of international efforts to address the health effects of smoking and secondhand smoke exposure. There is an international consensus that exposure to secondhand smoke poses significant public health risks. The Framework Convention on Tobacco Control recognizes that protecting nonsmokers from involuntary exposures to secondhand smoke in public places should be an integral part of comprehensive national tobacco control policies and programs. Recent changes in national policies in countries such as Italy and Ireland reflect this growing international awareness of the need for additional protection of nonsmokers from involuntary exposures to secondhand smoke.

When this series of reports began in 1964, the majority of men and a substantial proportion of women were smokers, and most nonsmokers inevitably must have been involuntary smokers. With the release of the 1986 report, Surgeon General Koop noted that "the right of smokers to smoke ends where their behavior affects the health and well-being of others" (USDHHS 1986, p. xii). As understanding increases regarding health consequences from even brief exposures to secondhand smoke, it becomes even clearer that the health of nonsmokers overall, and particularly

the health of children, individuals with existing heart and lung problems, and other vulnerable populations, requires a higher priority and greater protection.

Together, this report and the 2004 report of the Surgeon General, *The Health Consequences of Smoking* (USDHHS 2004), document the extraordinary threat to the nation's health from active and involuntary smoking. The recent reductions in exposures of nonsmokers to secondhand smoke represent significant progress, but involuntary exposures persist in many settings and environments. More evidence is needed to understand why this progress has not been equally shared across all populations and in all parts of this nation. Some states (California, Connecticut, Delaware, Maine, Massachusetts, New York, Rhode Island, and Washington) have met the *Healthy People 2010* objectives (USDHHS 2000) that protect against involuntary exposures to secondhand smoke through recommended policies, regulations, and laws, while many other parts of this nation have not (USDHHS 2000). Evidence presented in this report suggests that these disparities in levels of protection can be reduced or eliminated. Sustained progress toward a society free of involuntary exposures to secondhand smoke should remain a national public health priority.

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September 26, 2006

MEMO

TO: Jeff Pederson

FROM: Nannette Pogue

SUBJECT: Proposed Engagement Letter with Gilmore & Bell, Bond Counsel

Attached is a proposed engagement letter with Gilmore & Bell, Bond Counsel, for the proposed issuance of \$6,500,000, Taxable Industrial Revenue Bonds for David, Inc. A resolution of intent to issue Industrial Revenue Bonds in the amount of \$6,500,000 for the construction of a hotel (LaQuinta Inn) was adopted by the governing body on October 17, 2005. The bond documents and issuance of IRB's probably won't be completed until sometime next year. However, the bond counsel, Gilmore and Bell has been contacted by the Parmar's. Building permits have also been issued for the project. So, the project is underway. Gilmore and Bell have sent an engagement letter for the City Commission's approval. This letter sets forth certain matters concerning the services the bond counsel will provide for the Parmar's as well as the City of Dodge City.

If you have any questions or wish additional information, please let me know.

September 26, 2006

Mayor
City of Dodge City
806 2nd Avenue, P.O. Box 880
Dodge City, Kansas 67801

Re: Proposed Issuance of \$6,500,000
City of Dodge City, Kansas
Taxable Industrial Revenue Bonds, Series 2006
(David, Inc. Project)

The purpose of this engagement letter is to set forth certain matters concerning the services we will perform as bond counsel to the City of Dodge City, Kansas (the "Issuer") in connection with the issuance of the above-referenced bonds (the "Bonds"). We understand that the Bonds are being issued for the purpose of financing the construction and equipping of a commercial hotel facility (the "Project") for the benefit of David, Inc., and that the Bonds will be limited obligations of the Issuer, payable solely from revenues received from David, Inc., a Kansas corporation (the "Tenant") under a lease of the Project from the Issuer. We further understand that the Bonds will be purchased in a negotiated sale by Home National Bank ("the "Purchaser"), during the middle of the year 2007.

SCOPE OF ENGAGEMENT

In this engagement, we expect to perform the following duties:

1. Subject to the completion of proceedings to our satisfaction, we will render our legal opinion (the "Bond Opinion") regarding the validity and binding effect of the Bonds, and the source of payment and security for the Bonds.
2. We will draft the basic agreements governing the issuance of the Bonds and lease of the Project to the Tenant.
3. We will prepare and review other documents necessary or appropriate to the authorization, issuance and delivery of the Bonds, and coordinate the authorization and execution of documents.
4. We will assist the Issuer in seeking from other governmental authorities such approvals, permissions and exemptions as we determine are necessary or appropriate in connection with the authorization, issuance, sale and delivery of the Bonds, except that we will not be responsible for (a) any required blue sky filings or (b) any permits or approvals relating to construction and operation of the Project.
5. We will review legal issues relating to the structure of the bond issue.

Our Bond Opinion will be addressed to the Issuer, the Tenant and the Purchaser, and will be delivered by us on the date the Bonds are exchanged for their purchase price (the "Closing").

The Bond Opinion will be based on facts and law existing as of its date. In rendering our Bond Opinion, we will rely upon the certified proceedings and other certifications of public officials, officers of the Tenant, the Purchaser and other persons furnished to us without undertaking to verify the same by independent investigation, and we will assume continuing compliance by the Issuer and the Tenant with applicable laws relating to the Bonds and the use of the proceeds of sale of the Bonds. During the course of this engagement, we will rely on the Tenant to provide us with complete and timely information on all developments pertaining to any aspect of the Project, the Bonds, and the security for the Bonds. In rendering our Bond Opinion, we will expressly rely upon the opinion of counsel to the Tenant as to (a) the existence and good standing under the laws of the State of Kansas of the Tenant, and the adequacy of its corporate powers to carry on the business now conducted by them, and (b) the power and authority possessed by the Tenant to execute and deliver the transaction documents to be executed and delivered by them and the authorization, execution and delivery by the Tenant of such documents, and the binding effect of them upon, and enforceability against, the Tenant of the transaction documents.

Our duties at this engagement are limited to those expressly set forth above. Among other things, our duties do not include:

- (a) preparing requests for no action letters from the Securities and Exchange Commission.
- (b) preparing blue sky or investment surveys with respect to the Bonds.
- (c) pursuing test cases or other litigation, such as contested proceedings regarding the anticipated property tax exemption to be granted to the Tenant by the Issuer.
- (d) making an investigation or expressing any view as to the creditworthiness of the Tenant or the Bonds.
- (e) after Closing, providing advice concerning any action necessary to assure compliance with any continuing disclosure undertaking.
- (f) representing the Issuer in Securities and Exchange Commission investigations.
- (g) drafting of proceedings of the governing body of the Tenant authorizing the Tenant to enter into the transaction documents necessary in connection with the issuance of the Bonds.
- (h) drafting of any instruments of conveyance necessary to convey to the Issuer title to the land on which the Project is or will be constructed.
- (i) rendering any advice to the Tenant regarding marketability of title to the land on which the Project is or will be constructed, or rendering any opinion with respect to such conclusion.

ATTORNEY-CLIENT RELATIONSHIP

Upon acceptance of this engagement letter, the Issuer will be our client, and an attorney-client relationship will exist between us. We understand that the Issuer's city attorney also has been engaged by

the Issuer to review all transaction documents on behalf of the Issuer, and provide advice to the Issuer's governing body regarding same, and to review all proceedings of the Issuer leading to the authorization of the Bonds. We assume that all other parties, including the Tenant and the Purchaser, will retain such counsel as they deem necessary and appropriate to represent their interests in this transaction. We further assume that all other parties understand that in this transaction we represent only the Issuer; we are not counsel to the Tenant, the Purchaser, or any other party, and we are not acting as intermediary between the parties. Our services as bond counsel are limited to those contracted for herein; the Issuer's acceptance of this engagement letter will constitute an acknowledgment of those limitations. Our representation of the Issuer will not affect, however, our responsibility to render an objective Bond Opinion upon which the Tenant, the Purchaser and any other transaction participants will be entitled to rely.

Our representation of the Issuer with respect to this issue of Bonds, and the attorney-client relationship created by this engagement letter will be concluded upon issuance of the Bonds. Nevertheless, subsequent to closing, we will make certain filings and mailings required by state law, and will prepare and provide to the transaction participants a transcript of the documents and proceedings pertaining to the Bonds. In addition, since we regularly represent the Issuer as its Bond Counsel on financings for its own projects, we may answer questions for, or give advice to, the Issuer with respect to the Bonds.

As you are aware, our firm represents many political subdivisions and entities involved in bond transactions, primarily underwriters or other bond purchasers, trustees, issuers, or credit enhancement providers. It is possible that during the time that we are representing the Issuer in this engagement, one or more of our present or future clients will have transactions with the Issuer. It is also possible that we may be asked to represent, in an unrelated matter, one or more of the entities involved in the issuance of the Bonds. We do not believe such representation, if it occurs, will adversely affect our ability to represent you as provided in this letter, either because such matters will be sufficiently different from the issuance of the Bonds so as not to make such representations adverse to our representation of you, or because the potential of such adversity is remote or minor and is outweighed by the consideration that it is unlikely that advice given to the other client will be relevant to any aspect of the issuance of the Bonds. Execution of the acceptance of this letter will signify the Issuer's consent to our representation of others consistent with the circumstances described in this paragraph.

FEES

Although the Issuer will be our sole client, the Tenant will be responsible for paying our legal fees. We have sent a letter to the Tenant regarding our fees.

RECORDS

At your request, papers and property furnished by you will be returned promptly upon receipt of payment for outstanding fees and expenses advanced. Our own files, including lawyer work product, pertaining to the transaction will be retained by us. For various reasons including the minimization of unnecessary storage expenses, we reserve the right to dispose of any documents or other materials retained by us after the termination of the engagement.

If the foregoing terms are acceptable to you, please indicate by returning a copy of this engagement letter dated and signed by an authorized officer, *retaining a copy for your files*. We look forward to working with you.

Very truly yours,

Philip C. Lacey

PCL/dd

Accepted and approved:

City of Dodge City, Kansas

By: _____

Name: V. James Sherer

Title: Mayor

Date: _____

cc: Ken W. Strobel, Esq.
Mr. Wilson Parmar